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To
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and of
Its Various Sub-Committees
A TRIBUTE OF APPRECIATION

प्रारब्धमुत्तमजना न परित्यजन्ति

# PERSONNEL OF THE SUB-COMMITTEE ON GENERAL EDUCATION

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Woman's Role: Srimati Shantabai Rangarao

# PREFACE

The National Planning Committee, appointed in 1938, began its work early in 1939. After defining the nature of a National Plan, and determining the nature and scope of the work entrusted to them, the Committee issued an elaborate and comprehensive Questionnaire which was subsequently supplemented by specific details. Twenty-nine Sub-Committees, formed into eight groups, were set up with special terms of reference to deal with all parts and aspects of the national life and work in accordance with a predetermined Plan.

After some unavoidable delay in getting replies to the Questionnaire, the Sub-Committees began their work, and submitted Reports,—some of them Final, some Interim,—which were considered at the Plenary Sessions of the Parent Committee in 1940. Towards the end of that year the Chairman, Pandit Jawaharlal Nehru, was arrested and sentenced to a long term of imprisonment, during which the work of the Committee had necessarily to be suspended.

On his release a year later, hope revived for an intensive resumption of the Committee's work. But th outbreak of war with Japan, the threat to India's own safety, and the hectic march of political events, rendered it impossible to devote any attention to such work at that time. It, therefore, inevitably went into cold storage once again; and remained for the duration of the war.

When at last the War seemed nearing its end, Pandit Jawaharlal Nehru with other leaders was released. The moment seemed again opportune to resume the work of the Planning Committee. Meetings of that Body were held in September and November 1945, when certain more urgent questions, already included in the programme of the National Planning Committee, were given a special precedence. A Priority Committee was appointed to report upon them. Changes and developments occurring during the War had also to be taken into account; and another Committee was appointed to review the general instructions, given six years earlier to the Sub-Committees. Revised instructions were issued to them following the Report of this Sub-Committee; and the Chairmen and Secretaries of the several Sub-Committees were once again requested to revise and bring up to date such of the Reports as had already been submitted—either as final or interim—while those that had not submitted any reports at all were asked to do so at an early date.

As a result, many of the Sub-Committees which had not reported, or had made only an Interim Report, put in their Reports, or finalised them. The Parent Committee has had no chance to review them, and pass resolutions on the same. But the documents are, by themselves, of sufficient value, prepared as they are by experts in each case, to be included in this Series.

The following Table shows the condition of the Sub-Committees' work, and the stage to which the Planning Committee had reached in connection with them.

| Serial No. | Name of the Sub-Committee. | Final Report |  | Interim Report |  | No Reports |
|---|---|---|---|---|---|---|
|  |  | N.P.C. Resolutions | Not considered by N.P.C. | N. P. C. Resolution | Not considered by the N.P.C. |  |
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| 5. | Animal Husbandry and Dairying | 87-89 |  |  |  |  |
| 6. | Crop Planning and Production |  |  |  | do. | do |
| 7. | Horticulture | 102-103 |  |  |  |  |
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| 3. | Chemicals |  |  |  |  | do. |
| 4. | Mining and Metallurgy |  |  | 77-79 |  |  |
| 5. | Engineering Industries | 75-77 |  | 130-133 |  |  |
| 6. | Manufacturing Industries |  | do. |  |  |  |
| 7. | Industries connected with Scientific Instruments |  | do. |  |  |  |
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| Group VII | **Education** |  |  |  |  |  |
| 1. | General Education |  |  | 133-139 |  |  |
| 2. | Technical Education |  |  |  | do. |  |
| Group VIII | **Woman's Role in Planned Economy** |  |  |  |  |  |

To sum up, fourteen Sub-Committees had made final reports, of which ten have been considered, and Resolutions taken upon them, by the National Planning Committee. Twelve more have presented Interim Reports, of which nine have been considered by the Planning Committee, with Resolutions thereon, while three Sub-Committees have not yet presented any report on the reference made to them.

The idea that all this material, gathered together with the help of some of the best brains in India in the several departments of our national life, should be printed and published was before the Committee from the start. But the interruption caused by the war prevented its realisation. It was once again mooted in 1941; but the moment was not deemed ripe then for such action, partly because the leading spirits in almost every one of the Sub-Committees were unable to devote time and labour to bring their Reports up-to-date; and partly also because war-time restrictions or shortages had made scarcer than ever before the statistics and other facts, which particular sub-committees would need, to bring their work up-to-date. The war-time needs of Government had attracted several of them to work on Government Bodies, Panels, or Committees. For all these reasons it was deemed undesirable that material of this character—valuable as it must be—should be put out in an incomplete, inchoate, obsolete form, which may reflect unfavourably upon Indian capacity for such tasks.

The last four years of the War were thus a period of suspended animation for the National Planning Committee. Even after the end of the war, it has not been feasible, for obvious reasons, for the Planning Committee to resume its work and finalise decisions. Continuous sessions of that body are indispensable for considering and taking decisions on the Sub-Committee reports presented since 1940, and putting all the material into shape, ready for publication, not to mention making its own Report; but the political situation in the country made it impossible. Other conditions, however, are somewhat more favourable than in 1938-39, when the Central Government of the country were all but openly hostile to such attempts. Lest, however, the momentary difficulties make for needless further delay, it was thought advisable by the Chairman and the undersigned that no more time should be lost in putting this material before the Public. Following this advice, it is now proposed to bring out a complete Series of the National Planning Committee's Sub-Committee Reports, which will serve as appendices to the Parent Committee's own Report. The Plan of the proposed enterprise is briefly summarised below.

Every Sub-Committee's Report, which is in a final form and on which the National Planning Committee has itself taken resolutions, will be edited and published, with an Introduction assigning their due importance to the suggestions and recommendations contained in that particular report, its proper place in the over-all National Plan; and following it up, wherever necessary, by a kind of Epilogue, summarising the developments that have taken place during the seven years, during which the work of the Planning Committee had been in suspension.

Those Reports, again, which, though in a final form, have not yet been considered, and no resolutions taken thereon, by the Planning Committee, will also be included in the Series in the form in which they were submitted, with such Introduction and Epilogue to each as may be deemed appropriate. And the same treatment will be applied to Reports which are 'Ad Interim', whether or not the Parent Committee has expressed any opinion on the same. They will be finalised, wherever possible, in the office, with such aid as the Chairman or Secretary of the Sub-Committee may be good enough to render. Sub-Committees finally, which have not submitted any Report at all, —they are very few,—will also find their work similarly dealt with. The essence, in fine, of the scheme is that no avoidable delay will now be suffered to keep the National Planning Committee's work from the public.

Both the Introduction and the Epilogue will be supplied by the undersigned, who would naturally be grateful for such help as he may receive from the personnel of each Sub-Committee concerned. The purpose of these additions is, as already stated, to assign its true place to each such work in the over-all Plan; and to bring up the material in each Report to date, wherever possible.

Not every Sub-Committee's Report is sufficiently large to make, more or less, a volume by itself, of uniform size, for this Series. In such cases two or more Reports will be combined, so as to maintain uniformity of size, get-up, and presentation of the material. The various Reports, it may be added, would not be taken in the order of the classification or grouping originally given by the Planning Committee; nor even of what may be called the intrinsic importance of each subject.

In view of the varying stages at which the several Reports are, for reasons of convenience, it has been thought advisable to take up for printing first those which are final, and on which the Planning Committee has pronounced some resolutions. Printing arrangements have been made with more than one Press, so that two or three Reports may be taken simultaneously and published as soon as possible so that the entire Series may be completed in the course of the year.

Two other Sub-Committees, not included in the list of Sub-Committees given above, were assigned special tasks of (1) preparing the basic ideas of National Planning; and (2) outlining the administrative machinery deemed appropriate for carrying out the Plan. These were unable to function for reasons already explained. The present writer has, however, in his personal capacity, and entirely on his own responsibility, published the "Principles of Planning" which attempt to outline the fundamental aims and ideals of a National Plan. This remains to be considered by the Planning Committee. Similarly, he has also attempted to sketch an administrative machinery and arrangements necessary to give effect to the Plan, when at last it is formulated, and put into execution. Notwithstanding that these two are outside the Scheme outlined in this Preface, they are mentioned to round up the general picture of the arrangements made for publication of the entire work up-to-date of the National Planning Committee and its several Sub-Committees.

The several volumes of Sub-Committee Reports, when published, will be treated as so many appendices to the Report of the parent body, the National Planning Committee. It is impossible to say when that Committee, as a whole, will be able to hold continuous sessions, review and resolve upon Sub-Committee Reports which have not yet been considered, and lay down their basic ideas and governing principles for an all over Plan, applicable to the country, including all the facts of its life, and all items making up the welfare of its people.

The disturbed conditions all over the country, and the Labour unrest that has followed the end of the War has caused unavoidable delays in printing and publishing the several volumes in the Series, which, it is hoped, will be excused.

In the end, a word of acknowledgment is necessary to put on record the aid received by the Editor in the preparation and publication of this Series. All those who are associated in the task,—members of the Parent Committee, or as Chairmen, Secretaries or Members of the various Sub-Committees,—have laboured wholly, honorarily, and consistently striven to give the best that lay in them for the service of the country. Almost all Provincial Governments and some States,—the latter twice in some cases,—have made contributions towards the expenses of this office, which have been acknowledged and accounted for in the Handbooks of the Planning Committee, published earlier. Suitable appreciation of these will be expressed when the Parent Committee makes its own Report. At almost the end of its task, the expenditure needed to edit, compile, and otherwise prepare for the Press, the several Reports, has been financed by a Loan by Messrs. Tata Sons Ltd., which, even when repaid, will not diminish the value of the timely aid, nor the sense of gratitude felt by the undersigned.

Bombay, 1st July 1947. K. T. Shah.

Note:—In the Scheme of this Series, originally given, more than one Report was intended to be included in one volume in some cases. The combinations indicated in the circular, of the 20th of June 1947, had had to be modified as the printing of several Reports proceeded.

When about half the volumes were printed, it was found that that scheme would not give a fairly uniform series. The new arrangement is given on the page facing the title page. Some changes have had to be made in that list e.g., the separation of the two Reports on Public Health and National Housing, intended to be in one volume, are now in separate volumes.

Conversely, only the two Reports on Animal Husbandry and Dairying and on Fisheries were intended to be combined. As now decided, the Report on Horticulture is also included in the same Volume.

Again, the original combination of the Report on Mining and Metallurgy with that on Engineering Industries has been modified. The latter now combined with the Report on Industries Connected with Scientific Instruments, which was originally meant to be a separate volume, while the former is to be itself.

31st January, 1948. K. T. S.

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# INTRODUCTION.

## GENERAL EDUCATION AND TECHNICAL EDUCATION

In one volume are comprised here the Reports of two Sub-Committees, (A) on General Education, and (B) on Technical Education and Developmental Research.

The former contains a general survey of the position in regard to mass education, and the basic principles of policy, and administration. No matters of details are discussed; but almost all the important topics concerned with the problem of Mass Education in this country have been considered.

The latter deals with the more specialised, advanced problem of Technical Training and Scientific Education, Research or Higher Education, part of which may be treated under University Education: but the bulk of it has to be dealt with separately.

In this Introduction both are reviewed separately, and an attempt made to assign its proper place to either in an over-all National Plan.

## I PERSONNEL AND MEETINGS

Dr. Shyama Prasad Mukherjee was named Chairman of the General Education Sub-Committee, in the first instance; but as he was unable to take charge of his duties, the Sub-Committee was presided over by Prof. Sir S. Radhakrishnan when the Terms of Reference made to it were actually considered. The personnel of the Sub-Committee is given in the Interim Report.

The Terms of Reference as laid down by the National Planning Committee require the Sub-Committee to deal with General Education, to correlate the work of the Wardha Committee, and the Expert Committees appointed in the Provinces, mobilisation of labour for social services &c.

The Reference being couched in such very wide terms, the Sub-Committee proceeded to appoint, from among its members, group Committees to study and report on specific aspects of the general problem. Except the Group Committee on University Education, all other groups had reported when the main Sub-Committee took up the task entrusted to it. Its own Report was fully discussed at a meeting in Calcutta; and was then submitted to the National Planning Committee, which reviewed it and passed its own Resolutions on the subject, as given in their appropriate place in the pages that follow.

## II EVOLUTION OF NATIONAL POLICY ON MASS EDUCATION

In considering the place of Mass Education in a comprehensive National Plan put into effect simultaneously all over the country, the first problem that will confront the National Planner is in regard to the question of a national policy governing the entire system of national or mass education.

At the famous Karachi Sessions of the Indian National Congress in 1931, a resolution was passed by that body on the Fundamental Rights of Citizens, which states, in its Preamble, **inter alia,** that, "to enable the masses to appreciate what Swaraj, as conceived by the Congress, will mean to them, declared, that in order to end the exploitation of the masses any constitution agreed to on behalf of the Congress should provide, among other things, for free and compulsory primary Education." The country's governing policy in this behalf has ever since been guided by this ideal, which the Congress has accepted by this declaration.

The problem is difficult and complex in itself, when considered with reference to a country so vast as India, with its teeming millions, variety of languages, climates and economic conditions. Add to it the social, political and constitutional complications, and the complexity would be easier to imagine than to analyse, or explain.

The Sub-Committee, when it considered the matter seven years ago, were not quite aware of the latest political and constitutional developments, which are now aiming at a partition of the country on lines of religious differences. The sentiment for Provincial Autonomy, which has been fostered and encouraged by our own political leaders, precludes the formulation of a uniform National Policy and programme, and much less its uniform execution throughout the country. It is, indeed, a matter for grave consideration, whether, in the face of our multitude of languages and the enormous numbers to be dealt with over a huge area, under a bewildering variety of customs and usages, conditions and circumstances, it is desirable, in the interests of the people to be educated and the resources to be developed, that a uniform policy and administration should be aimed at in our Public Education system. But even conceding the force of these factors, the Planner cannot but long for and strive to attain some degree of uniformity in the basic ideals and objectives, which will dictate the policy of the country in this behalf. The following observations, accordingly, sketch the evolution of the National Educational Policy, ideals and objectives, which may well be harmonised in a common National Plan.

## III FIRST STEPS IN SYSTEMATIC PUBLIC EDUCATION

Without going into the earliest attempts at an organised system of mass education in the country, we may begin with the latest phase, when public consciousness of this need began to be felt widely. The indigenous systems of of this country had provided for individual education according to the ideals and conditions of the day. It was, however, with the establishment of British dominion in India that attempts began to be made at an organised, nation-wide system of education in this country.

Education, in many of its more salient items, was made a "Transferred Subject", when the first dose of Provincial Autonomy was introduced in the Indian Constitution by the so-called Montague-Chelmsford Reforms of 1919. Public Education became a direct responsibility of popular Ministers, who felt themselves in honour bound to make good the criticisms they used to urge against the irresponsible Bureaucracy. Their powers and resources were, however, limited. Nevertheless the new responsible Ministers sought to develop, in their own way, this great nation-building department. But their ardour was damped by the lack of funds, of sufficiently trained teachers, of the necessary buildings, of equipment and apparatus, not to mention the absence of any well-considered policy, plan, or programme for achieving their aims.

There were many defects and shortcomings inherent in the working of this Department, and the objective it was seeking. The system of education, as it had developed till then, had brought about a top-heavy structure, which had more or less neglected the foundation of a really sound educational system. There was no compulsory, free primary education to the mass of the country's children. Education, such as it was, was the privilege of the few,—those who could pay for it. Its transformation into a Fundamental Right of every child has yet to be achieved in daily life. Because modern education was the only gateway to a decent chance of employment, all who went in for education aimed at reaching its highest level. Not all succeeded, of course, in completing even their Primary stage. In 1942-43,—the latest period for which figures are available, there were, in recognised institutions, boys and girls in the following figures :—

| Ttal Scholars in :— | Boys | Girls |
|---|---|---|
| 1. Primary Schools | 8,566,938 | 3,027,420 |
| 2. High Schools | 1,109,265 | 170,581 |
| 3. Percentage of 2 to 1 | 12.8 | 5.7 |
| 4. Colleges | 134,842 | 13,892 |
| 5. Percentage of 3 to 2 | 12 1 | 7.65 |

This does not differ materially from the position in other countries as shown below :—

| *Total Scholars in :— | U. S. A | France | Eng. & Wales (1945) | Canada |
|---|---|---|---|---|
| 1. Primary | 20,356.500 | 4,870,082 | 5,022,068 | 2,013.541 |
| 2. Secondary | 6,92,3,538 | 346,447 | 1,008,000 | — |
| 3. Ratio of Secondary Scholars to Primary Scholars | 34.19% | 7.11% | 20% | — |
| 4 Universities Technical classes and colleges etc. | 1,259,045 | 102,731 | 40,019 | 106846 |
| 5 Ratio of University Scholars to Secondary Scholars. | 18.18% | 30% | 4% | 5.3% |

*These figures have been taken from the Statesman's Year-Book 1945.

The purpose of mass Education was not all properly planned out. From the very start, Western education in this country aimed at making out of the educated section of the Indian people recruits for the military defence and conducting the British Administration. Clerks and soldiers, with a small leaven of professional men, made up the bulk of the "educated", who acted as the agents of the British in this country. Animated by the ideals and influences which inspired the Britisher in his own country, these indigenous recruits and agents in India observed the same traditions, and carried out the same policy, though in a more intensive form. Class, rather than mass, education became rather the rule or fashion, and remains so to this day.

## IV. TOP HEAVY SYSTEM

Such policy necessarily resulted in an over-emphasis on purely literary education; and that, too, in a foreign language. The schools and colleges became so many factories for mass production of a standardised pattern. Little or no attention was or could be paid, in that System, to real education—or training and development of the inherent faculties of man, as distinguished from imparting literacy in an alien idiom. The tests prescribed, moreover, were trials, not of real learning, ability or originality; but of the mechanical facility to reproduce what had been drilled into one's memory at annual or periodical examinations, conducted by means of set questions and standard answers. In such a system, individual initiative was neither wanted nor independence encouraged. Imitation, repetition, routine, dull and lifeless; routine without end or variation, was the absolute rule, and precedent the reigning divinity.

Such an objective of the National Educational System may be accepted when the purpose of the Power-that-be in the land was to secure recruits, spokesmen, or agents, in the task of the country's administration by an alien power. When, however, the people of the land come to shoulder direct responsibility, and wield authority in their own governance, the problem of mass or national education would wear a wholly different aspect. We have to convert the mass of mere literates into a body of independent, intelligent workers, responsible citizens of a free democracy. We have to mobilise the entire man power of the country to fit into an over-all national plan, to work it intelligently each in his or her own appropriate role; so that they become real architects of their own as well as their country's prosperity. Still more, we have to recast the entire machinery, together with its basic ideals and dominating purpose, in which the new generation is to be trained, educated, and fitted for its tasks in the New Age, now dawning upon this land.

The task of the National Planning Authority in this sector of the National Plan would, therefore, be threefold: to redefine the aims; to redesign the method and content; to reshape the entire purpose of organised and systematic national education.

With the introduction of the successive instalments of self-government and Responsible Ministry, the need for a revolutionary change grew and extended apace. Our leaders had been far too long, however, in futile opposition to be able all at once to think out and apply their own constructive alternative. Our people had been much too long under the leading strings of a foreign power to be able to find their way through strange grounds and unchartered seas. Add to this, the deliberately encouraged sentiment of Provincial Autonomy, of local patriotism and parochial outlook, and you will easily realise the difficulty of working out a new, uniform policy for Public Education.

The position has been aggravated in the years that have followed the advent of full Provincial Autonomy under the Constitution of 1935, still in force. Thanks to that influence, in the new constitution now being worked out, the basic principle of local autonomy in all such matters has been accepted much too fully to allow an immediate evolution of a uniform national policy and common administration in the National System of Education !

## V. NEW OBJECTIVES AND NEW METHODS

Despite this handicap, the inherent urge for a common policy and integrated system have asserted themselves. The Government of India have re-established since 1935, their Central Advisory Board of Education, which has tried, notwithstanding the independence of the Provinces in matters educational, to bring about common objectives and co-ordinated effort. This has been achieved by periodical conferences between the Central Educational Advisory Board, and the corresponding representatives of the Provinces. Beginning with inter-change of views on the main problems affecting the country, this method has brought about an increasing measure of agreement in policy as well as on details. To the extent that agreement is arrived at between the conferring representatives, the Board has been able to make effective and substantial recommendations to the Central Government for being adopted and given effect to, by the latter as well as by the States and Provinces agreeing. The role of the Centre is thus initiative, investigating, integrating and aiding financially.

A new Educational Policy and Programme has thus come to be evolved, acceptable throughout the country. The Centre is able to induce agreement, not in virtue of its Constitutional Authority, but by its better sources of information, as also by its larger resources. The latter has promised judiciously to distribute considerable sums to advance specific items in the programme in particular Provinces.

However induced or persuaded, the Provinces and States are free agents, accepting the Centre's recommendations voluntarily, and carrying them out only so far as their local conditions, circumstances and requirements allow. The Central Education Board, it cannot be repeated too often, is purely Advisory; and its recommendations to the Central Government, and, through the latter, to the Provinces and States, are in the nature of mere suggestions. These have only such weight as may be derived from the status and reputation of the individuals who have considered and worked out the various suggestions submitted by the Provincial Representatives and Central Authorities on the subject.

## VI. FINANCIAL GRANTS

"The Central Government have an intangible influence in respect of their ability to make grants-in-aid to the States and Provinces to prevent the latter making an excuse of lack of funds in giving effect to their recommendations. The Indian States are not yet on a footing with the Provinces, so far as their claim upon the Centre for financial aid is concerned. But a good few of them are anxious to maintain an even pace; and so the programme becomes more or less uniform all over the land.

It is, indeed, no longer possible for the Centre to make their grants conditional upon their own initiative, and reserve any powers of control or supervision in consideration of such grants. Grants may be earmarked for particular purposes, or for specific lines of advance, and, if they agree, the Provincial Governments would have to act on the lines prescribed, or carry out the object named. To the States, the Government of India make no such direct financial grants. But there are other ways and means to make the States also fall in line, if only in respect of their claim to have a comparable standard of administrative efficiency and social progress.

The evolution of common lines of advance, and uniform national policy becomes a matter of voluntary agreement, due in a great measure to the fuller realisation of their own responsibility by the new rulers; and also to the increasing perception of political leaders of the country's need. The benefits of Swaraj cannot all be taken on trust. Slogans must be translated into actual achievements. And hence the impetus to a new impulse of reconstruction, growth and development, which is perhaps noticeable in no other field so clearly as in that of National Education.

## VII. PLANNED ADVANCE IN EDUCATION.

The specific items in the planned programme of National Education may next be reviewed.

The principal problems in regard to National Education may be summarised at this stage as follows:—

(i) Formulation of the Principles governing the National Policy of Education;
(ii) Its objectives;
(iii) Method and contents of the several stages of National Education, Basic, Secondary and University;
(iv) Continuation of education after the school-going age as a matter of the cultural development of a human being; general cultural activities amongst the masses;
(v) Education of the Defective, the Backward or the Problem Child;
(vi) Supply of trained teackers; of text books, instruments, and apparatus;
(vii) University education, Scientific research, Technical training, including education abroad;
(viii) Provision of employment for those educated;
(ix) Scope for Private Enterprise in National Education;
(x) Finance.

### (i) Policy: Basic or Elementary Education, Free, Universal, Compulsory.

Every child of the prescribed school-going age, say between 6 and 14 years of age, must receive a prescribed modicum of education and training, as the irreducible pre-requisite of full citizenship. It is not enough to bring the child to school; it must be kept there till it has attained the prescribed minimum stage of enlightenment and training. The exact degree of education to be given to every child might vary from Province to Province. But there can be no difference of opinion as regards the elementary dictates of the National Educational Policy. This can be given effect to, only beginning with the child of six years. The problem of educating upto the prescribed minimum of (a) all children over six years of age at the date the policy is put into operation; and (b) of the adult and adolescent illiterates, will still have to be faced, at least for such period as the entire population is educated up to the prescribed minimum stage. This will be an item of the all-over National Plan; but not necessarily part of the Mass Education Programme.

Whether or not the recipient of such education or its parents or guardians are able to provide for such instruction and training being given to the child, the State (or the community collectively) must shoulder the obligation. It must assure to each citizen, education and training upto the predetermined minimum, deemed indispensable for preparing a civilised human being for shouldering the tasks of life.

The exemption of the parent from any charge on account of education should include not merely the immunity from school fees; but also the provision of such tools and implements of education as books and apparatus, which the pupil would need in the course of his education.

No exemption should be allowed in this regard on grounds of social custom or prejudice, e.g. for women.

3. Further, lest the temptation to the parent to utilise the labour of a child for eking out the very slender budget of an average Indian Family prove irresistible, and the programme of mass education upto a predetermined minimum prove futile, this education must be made compulsory if the child concerned stays with a parent or guardian.

   No exemption from this civic obligation be permitted by law, except on stated grounds of congenital defect, permanent invalidity, or sub-normal intelligence. These are not real exemptions; but should be remedied in specialised institutions. The parent violating or denying this right of the child must be punished under specific provisions of the law; and no compensation need be offered for the loss of the child s earnings by its going to school.

   Needless to add, the right of the child is the obligation of the community which cannot be evaded or escaped from. The State, whether Central, Provincial or Local Government, must find ways and means to make this a reality within a period rigidly prescribed under the Constitution; and deemed unavoidable by the Plan.

4. This right is equal, uniform, and universal, irrespective of class, creed, or sex. Too much care cannot be taken to see that no sense of social snobbishness or class consciousness enters at this stage. No exclusive institutions must, accordingly, be permitted on any pretext of ritual or ideological differences.

   The National Education must be common and equal to all. If any supererogation is added, it must be certified first to be entirely without a trace of anti-social nature, before it can be allowed to be given to any section of the community. And such supererogatory education must be **in addition to, and not in substitution for,** the ordinary education given to all citizens.

   Room may, indeed, be left in this system for experimentation in the art and science of Public or Mass Education. The National Educational System of India must not be rigid or lifeless: Provided the minimum prescribed is made available to every child in the community, opportunity must be available to educationists to try out experiments in method, materials, or subjects in systematised education.

### (ii) Objectives of Systematised Education

Assuming that the provision of universal Primary Education is an inescapable obligation of the State in India, the next question concerns the purpose and object of such education, its method and content.

The aim of a national education may compendiously be defined to be threefold :—

(i) to develop the inherent faculties of man so as to enable him to express, fulfill, and realise himself;

(ii) to make him a good and useful citizen, and a decent social unit;

(iii) to equip him for the battle of life and enable him to bear worthily the obligations of a member of a real, working democracy.

This triple aim can be achieved, not merely by instruction or training the inherent faculties of intelligence or memory, but also by developing the physical faculties, and thereby associating the child to be educated actively in the process of its own education.

For this purpose of effective education, every educationist is agreed that knowledge imparted can be fully retained, and instruction given properly grasped, only if it is conveyed through the medium of the child's mother-tongue. It should be reinforced, so to say, with the aid of some craft, or group of crafts, in which the mind as well as the body, intelligence as well as the memory, sense of aesthetics as well as of utility, may be trained and developed. Then only will Education be real as well as lasting, and all its purposes effectively served.

To a large extent these objectives, and the technique of public education adopted in pursuit of them, are different from those now prevailing. The aim of Education, all through the British age in Indian history, was to impart literacy through the medium of the Rulers' language, which was foreign to the mass of the people. The degree of literacy imparted was sufficient to enable the person so "educated" to be an useful agent and efficient tool of the foreign ruler in his task of administration. With this objective, memory, as tested in mass examinations by stated questions, was most important, the most serviceable organ in imitation, repetition, or routine. Intelligence, initiative or originality could not be encouraged; and so they did not receive their due.

But these aims must be now reversed. Education must be undertaken for the entire mass of the people, so as not only to bring every child of school-going age into school, and keep it there for a prescribed period; but also bring out the best in each individual, and enable him to fulfill his purpose in life. It will make each a useful member of society, fully aware of his rights and obligations; contributing his due share to the common need, and sharing also in the common wealth in accordance with his own need.

While education is thus made as much subjective as objective, as much cultural as utilitarian,—it is not divorced from the material needs of human existence in the present stage of our social organisation. The problem of employing and utilising the entire man and woman-power of the community, in work suited to the aptitude and training of each worker, cannot be ignored. Its solution, however, would be particularly easy under a fully planned national economy. A comprehensive Budget regarding the need for personnel in each trade, industry, profession, vocation service or utility, must be prepared in advance as part of the Plan; and only qualified personnel be asssigned to each.

### (iii) Stages of Education, Method and Content

The various stages of organised education,—available, both as a fundamental right to all living within the country, and as a matter of all-round national development,—must next be defined; and mutually integrated, so as to form a consistent and comprehensive whole. Each Stage must be properly correlated with the material side of the National Plan, so that the **personnel** aspect of the Plan need not cause any impediment; and problems like the present day question of the "educated unemployment" may become impossible.

As observed, education does not consist only in Literacy. The inherent and indestructible powers of the soul and being of every man and woman must be fully developed by systématised education. No less important is it to attend to the bodily, as to the mental, faculties of every child in the community. This wider conception of the scope of the national educational system was all but neglected in the age now coming to an end. A radical change must be effected, and the necessary knowledge and training, at least upto the prescribed minimum, must be made available to all.

At the same time, all must be enabled to make the best use of the education and training they receive for their own as well as their country's good. It may, indeed, be made an axiom of the national policy of education, that the child belongs to the community as much at least as to its parents. The task, however, of its upbringing in health and fitness is, as things stand, hardly ever carried out satisfactorily by the parents. For, the average parent is neither qualified, nor even willing to shoulder this responsibility. We must, therefore, postulate this duty as an obligation of the community collectively; and no evasion or modification of it be permitted.

### (a) Pre-School Stage

At the present time pre-school education is a luxury, available only to town dwellers, if at all. This must also be made as wide-spread as possible.

Because of lack of adequate resources, beginnings have to be made in this department on a limited scale in those centres of work or population where numbers can be found sufficient to allow satisfactory arrangements being made for the schooling of infants. Whether the mothers are working women, as may quite possibly be the case in an increasing degree under planned economy; or whether they stay at home, the care and upbringing of the child, in the years before compulsory education commences, is a task that not every mother is fit for. It must, therefore, be part of organised effort, through a Municipality, or other local self governing body. In the alternative, such other agencies will have to be developed and aided as may already be at work in that field.

Wherever considerable number of workers are concentrated in a factory or workshop, the obligation in regard to pre-school education of the workers' children may fairly be laid upon the Factory or Workshop owner, whether private individual, joint stock concern, or some public authority. For reasons of economy two or more such concerns may combine to discharge this duty with greater efficiency. If and while the State cannot undertake this obligation entirely on its own shoulders, it may make grants to such establishments maintained by private individuals or concerns.

In the country, on the other hand, with scattered population and considerable distances intervening, the organisation of suitable education for children under six is a much more difficult task. But even there a beginning must be made. Parents or guardians must be accustomed to look upon this item as a kind of social obligation, which they must help to discharge to the best of their ability. Local Bodies must be aided and abetted for the purpose; targets fixed to develop it progressively; and all other arrangements made so as to universalise the system as soon as possible.

There is, indeed, no inherent opposition between the educational requirements in this stage of an urban or a rural child. The differentiation made above is due simply to the concentration of population, which makes it more economic and feasible in administration to begin the programme there, and extend it subsequently to the country at a later stage.

Nor need it be assumed that the differentiation between Urban and Rural life is eternal and immutable. In proportion as Agriculture and its allied occupations become mechanised, standardised, and on mass scale, i.e. in proportion as they become "industrialised", the divergence between the ways of life and moulds of thought will diminish, till it disappears altogether. Civilisation is town bred; and progress the result of co-operative social endeavour. If that proposition is accepted, the village itself may be transformed, in course of time, and by the growth of industrialisation.

So long, however, as the present differentiation exists, some difference in the methods, instruments or contents of pre-school education may be permitted. Care, however, must be taken from the start to see that such differences do not become stereotyped.

### (b) Basic Education to be Universal and Compulsory

The most urgent and important item, universally accepted in principle, is that the entire child population of the country should be brought into school, and should be kept there for a prescribed period. This is calculated to suffice for instilling a modicum of elementary knowledge indispensable for an intelligent exercise of a citizen's rights in a modern Democracy. With our present day consciousness of the need for proper education; with the new responsibility of an equal member of the sovereign authority in a democratic State; mere literacy, or the inculcation of the so-called three R's, will not suffice. Even if we cannot attain all at once to Plato's level of educating the masters in a modern democratic State upto the degree of a philosopher-king, we cannot be content with the simple skill in reading or writing one's own mother-tongue, or making easy calculations. If Democracy is not to be an empty name, or the plaything of Party bosses; if our Civil Liberties and Fundamental Rights of Citizenship, so dearly purchased, are not to be denied or perverted by dictators or reactionaries; if the freedom and opportunity which the new regime of national independence and planned economy offers for material improvement and cultural growth, Public Education must be broad-based as well as widespread. It must be available to all, not in name only but in reality; and become every individual's means to achieve self-realisation and self-fulfilment, which is today the privilege of a microscopic minority. The method, content and extent of this stage having been already dealt with while discussing the policy and objectives of the National Educational System under planned economy, no further observations are needed in that behalf.

Another difficulty in the system of education hitherto prevailing was that, while it provided elementary education for a relatively small percentage of the community, it made those thus educated almost invariably seek higher stages of education in the Secondary school and the University. This was due to the fact that the only available channel of employment was limited, and open only to those thus educated. The aggregate available employment was very much smaller than the numbers qualified for it year after year. The spectacle of mass unemployment and frustration began in consequence to be wide-spread and increasing throughout the land. Figures given above indicate the number of those receiving primary education, as also of those going for the successive stages of higher organised education. The wastage and stagnation in the primary stage are not brought out in these statistics; nor do they tell very clearly the tale of those unsuited for University education. A fairly large proportion of those who enter the Elementary Schools hardly ever progress beyond the first year. Those who reach the end of that stage aggregate hardly more than 15 out of every hundred joining in the first year. Even those, who may thus be said to have completed their full term in the Primary stage, and leave school at that point, do not always retain in after life the knowledge they had acquired during that stage. There is to-day a woeful divorce between daily life and school in this country. It will be the first task of planned education to remove this anomaly. It is, therefore, necessary to make the system of education reflect the atmosphere and conditions of home and usual work as nearly as possible in school, so that the normal work which every citizen must do in later years, would not be unfamiliar or disappointing.

It will be no small merit of a predetermined Plan, with an elaborate Personnel Budget, which sees to it that for every person a job is ready even as he or she leaves the school, at any successive stage in education and training; and so reverse the course of recent history when there were more persons than jobs, so as to provide at least as many jobs as there are persons qualified to fill them.

### (c) Secondary or Technical Education

In this view of the National Education system the right of every citizen to be educated free of cost would have to be necessarily restricted,—at least in the initial years of the Plan,—to such a degree of education and training as the resources at the disposal of the community permit. This is not because of any lack of appreciation of the real value of education in all branches, and upto the highest stage. It is simply and solely due to our limited resources, which, when properly organised and fully developed, will make Education as varied, and of as high a degree as anywhere else in the world.

Notwithstanding considerations of cost and limited resources, in the higher Secondary stage, also, the State cannot abdicate its function, or deny its obligation altogether. Pending the assumption of the obligation wholesale, the State must reserve to itself, not only the right to control and supervise all institutions, run by private enterprise, providing Secondary education; but also see to it that the profit motive is kept within rigorous bounds. It must also prescribe standards, lay down the general policy, and hold official tests to certify given degrees of proficiency or efficiency. There should be no place for anyone in the planned economy of the country without an appropriate certificate of such proficiency or efficiency.

To carry out these aims effectively, the State should have some Secondary insitutions of its own, where selected scholars may be given, at public expense, higher education and technical training to meet the needs of the community in the various sectors of the Plan; and also that of individual scholars in accordance with the latter's inherent aptitude, training, or temperament.

For the rest,—youths not specially distinguished but yet seeking higher education for themselves,—some fee may have to be charged, so as to meet a given proportion of the cost of such education. Whether the State charges fees to these directly in its own institutions, or permits privately owned institutions who cater for this class to do so, is immaterial. The principle is simple: Higher education is not universal, nor free. Some hardship may, no doubt, be caused in this stage to otherwise deserving pupils because of lack of ability of the parents or guardians to bear this charge. A number of promising children may thereby have to be left out of the advantage of Secondary education or Technical training. In such cases the State should provide scholarships, grants, or otherwise aid these promising elements, in addition to those selected by itself for higher education; and so fit them to meet the planned needs in regard to skilled personnel in the various branches or items of the planned programme.

Even in those advanced countries where Basic Education has been free, universal and compulsory for generations, not more than 15 per cent to 20 per cent of the total school-going population seeks Secondary or Technical Education; and a like percentage of those in the Secondary stage go up to the University. An aggregate of 15 per cent of those in the primary stage for the next higher stage in the system, and of 10 per cent of that stage for the highest stage of University education and Scientific Research or advanced Technical training, would, in the initial years of India's National Plan, be sufficient for the various sectors of the planned programme of material development in respect of higher trained personnel to serve as foremen, departmental managers, or middle grade technicians.

A special Committee of the Central Advisory Board of Education has already suggested the method and principles of making such selection, which are summarised at the end of this volume. The total numbers in the Secondary stage would not exceed 25 per cent of those in the Basic Stage, or the total number of school-going children between 6 and 14 years of age.

*Even as regards those who have been elected to* acquire higher education at their own expense, it would be necessary to encourage and determine the particular lines in which these students should specialise, so that, after the period of training and education is finished, the individual thus prepared will be absorbed in the general programme. The choice or determination must be made, not by individual vagaries or parental fancy, but by the predetermined requirements of the planned programme; so that no one should, after the period of education is over, remain unemployed and burdensome for lack of suitable occupation. This would be no small item in the overall National Plan, in the sector of Education.

Given the large numbers of persons likely to be thus available, there will be no difficulty in absorbing them in appropriate and necessary occupation notwithstanding differences in individual taste, temperament, or training The planned programme, with an elaborate personnel Budget for each year, will be sure to offer every variety of work to suit the several degrees of training and qualification; and meet every variety of local preference, special aptitude, or individual temperament.

With the reorientation in policy and programme suggested above, the disproportion, as it appears now, between the Secondary or University stage in education, and that of mere literacy, would disappear. It would be the function of the Planning Authority and Administration to see to it that, while the entire mass of the country is given the benefit of an irreducible minimum of Basic Education and training, a sufficient,—but not excessive, proportion is also brought into the Secondary or still higher stage, in accordance with the planned needs of the country.

The present spectacle, again, of stagnation and wastage in the school-going population, must be remedied. The total expenditure on Public Education today hardly brings in a return of as much as 3 annas for every Rupee spent. This must be reconditioned, so that every pie spent on the National System of Education yields its due return. The arrangement must be such that, in the final analysis, such numbers should be trained up in the higher stages of arts and crafts, technique and science, as well as of general education, as would be required to meet the various demands, in all its items and aspects, of the National Plan.

University education and Scientific Research are dealt with separately.

### (iv) Adult Education and Cultural Development

The problem of Adult Education, as it is considered today, consists mainly in the imparting of mere literacy to those adult citizens who have not received the benefit of elementary education in their childhood. As the latter itself is not yet universal and compulsory, the proportion of adults bereft of this benefit runs into millions. Nearly 4 out of every five males are lacking even in literacy; and 9 out of every ten women are in the same category. And this does not include those children, who, having nominally been to school, were unable to complete even their primary schooling; or who in after life are unable to maintain the little literacy they acquired at school.

These illiterate millions of adults, both men and women, cannot, however, be left unlettered or untrained all their life, when the government of the country, and the fate of all its millions yet unborn, depend upon their votes. If democracy is, as already observed, to be a real force in our country, even mere literacy for these myriads will not suffice. Adult Education, in our changed condition, will consist, not merely in the provision of the elementary learning of the three R's, but also that amount of additional knowledge and technical training which is comprised in the Basic Stage. It would also have to be a continuation of the systematic education and training, from the point that a citizen had had to leave off owing to circumstances beyond his control; so that the fullest possible cultural growth of every citizen is assured.

This threefold task of imparting simple literacy and the three R's; a minimum of material knowledge and technical training; and a continuation of the education from the point a citizen had had to discontinue, will require a practical duplication of the machinery evolved to provide compulsory universal Basic Education. The only difference would be that such education would be completed in a much shorter space of time than in the Basic Stage for the children, as the maturer intelligence and wider experience of the adult would permit of a more condensed form of such instruction.

The primary responsibility for providing this education to the adult mass must be that of the employer in the case of all organised industry; and of the Local Bodies, or Societies specially formed for the purpose. Government must, of course, provide the ground plan, the method and machinery of such education, and help in finding teachers,

—though that ought to be less difficult in this case than in the case of the ordinary child's education. They may even provide some sort of a subsidy to the employer,—at least while the regime of private property and profit-seeking continues. The employer must be made responsible by law to see to it that the education and training needed for his particular type of work are given in his factory or the workshop, to the workers engaged there. Time and room for the purpose must be found from the working hours; if that be not quite feasible during the initial years of the Plan, ample facilities should be provided to enable workers to attend the Factory Schools, Clubs, Intellectual Centres, Picture Classes, or other such arrangements.

The Adult education programme will, in this sense, be a part of the general cultural activities, which every Local Body, Statutory Corporation, Industrial Trust or Syndicate, Bank, Factory or Workshop, would be required to carry out as part of its normal duties. It need not, however, be an integral part of the National Educational System in charge of the Ministers of Education. Non-official Organisations may well arrange this matter, with general sympathy and some financial support from Government or Local Bodies. The ingredients of this item would be, not so much of set courses or curricula, as lantern lectures, exhibitions, concerts, museums, illustrated demonstrations, radio talks, and the like, on a variety of topics, which are of interest in the daily life of the masses. Instead, however, of their being left unorganised, or ad hoc attempts being made by unco-ordinated groups, they must be made part of the Plan so as to be systematised and regularised bringing the fullest possible benefit to the community.

This education must be made interesting as well as usefull. All the modern devices of the Cinema, the Radio, and the Teleprinter must be pressed into service, so that teaching or training of this kind does not become a burden. Only then can those not directly engaged in a given factory or workshop would be attracted to the more liberal side of such programmes. And here comes in the service of the Local Bodies, or Societies specially started for this purpose of Mass Education and Cultural growth. The example of Russia is, in this as in many other departments of working to a preconcerted Plan, encouraging as well as instructive; and ought to be utilised to the utmost possible.

### (v) Training the Defective, and the Problem Child

Training of the defective child must occupy a distinct place of its own, as the normal child's education must not be impeded by the task of providing for the abnormal. The physically defective children are, relatively speaking, in a small proportion; and, as the Plan progresses with success, that proportion is bound to decline.

Arrangements, therefore, for the suitable education and training of these, so that they be not a nuisance to society or burden to themselves, must be made by the State, or its delegate, the Local Self-Governing Unit, with such assistance from the Unit or Union Government as may be available, in respect of funds, personnel or technique. Quite efficient and satisfactory systems have already been worked out to meet this need, which is felt in every community; and which is not impossible to provide for in this country.

The case of the so-called Problem Child, or those mentally defective, stands on a somewhat different footing. While compensation for physical shortcomings have been found in mechanical devices, the need of the mentally defective, the idiot or the imbecile, still remains in the vague domain of Psychiatry. Experiments, however, are even in this case numerous; and the results by no means disappointing. Our proportion of this type of child or adult is fairly high, due probably to our economic and social conditions that the Plan is intended to remedy.

Provision for the Defective and for the Problem Child must be part of the National Education System. The proportion of these categories of children is not very high. But, given the very large number of our population, the number to be provided for in these classes would also be considerable. They must, therefore, be grouped and brought together under some common system, when their education and training would be easier; and their becoming eventually useful members of society, not a burden to themselves, nor a nuisance to others,—would be simplified. The task cannot be left to private charity or unco-ordinated public effort.

### (vi) Ways and Means to Find Teachers

As soon as the policy of universal and compulsory Basic education for every child in the community is adopted, the need for an army of teachers will become urgent as well as intense. Even today the problem of finding sufficient and suitable teachers is no mean handicap and impediment in the way of any progressive system of mass education. With the general principle of Basic Education through the medium of a craft beginning to be translated into everyday life, the need for specially trained teachers in ever increasing numbers would become more intense than ever. Given compulsory and universal Basic Education for a minimum period of 7 years there would be something like 50 to 60 million children to provide for. And this mass will not be properly attended to in all subjects as well as in all stages of the Basic stage, with less than 2 million teachers at the very lowest.

Education through craft requires in each teacher, not only a full knowledge of the technique of the craft,—principal or subsidiary,—but also ability to convey through it other branches of knowledge as well. For this purpose all the required number of teachers would have to be specially trained for a full course necessary. One of the first needs, therefore, of the new programme would be the intensive and expeditious training of teachers in sufficient numbers and quality to make the programme itself a success. In the first years of the Plan, it is very likely that attention will have to be concentrated much more on training institutions in every district of the country than on the implementation of compulsory and universal Basic Education proper. The Plan must take stock of this factor and deal with it immediately.

The figure mentioned above concerns only the Basic Teacher. The requirements of Secondary and University Education, as well as for Higher Scientific Research, are not included; and the number needed on that account will also not be inconsiderable. Even counting that only 15 per cent of those going in for basic education compulsorily will have to be provided in the Secondary Stage and 15 per cent of the latter in the next higher stage, the number of teachers needed would not be less than quarter of a million at least; and they will have to be specially adequately trained. Then again, the condition of services for teachers to-day are most unattractive; and so, they will have to be revised radically so as to make the profession more attractive and acceptable so that, they make a life career for those duly qualified.

This means an elaborate and extensive system of training the Teacher before he can be qualified to be entrusted with his work. The State will have to begin the programme of universal mass education by an extensive system of intensive training for the would be teacher. And that the pedagogic career may prove attractive to the proper sort of young man and woman, the conditions of employment and prospects in the profession will have to be substantially improved.

This is not simply a problem in public finance, though the financial aspect may be the most striking. It is a problem in selecting the right person, giving him the right preparatory training and experience, and affording him all those facilities which are necessary to make him keep up his zeal, and not become fossilised in the work.

The problem of mere numbers needed is not inconsiderable either. Even in the very first years, the number of teachers needed will run into 6 if not 7 figures. And these will not be possible to provide, without some recourse to a system of Social Conscription. Once the inequalities in return from the different occupations available under the Plan are ironed out, the future recruitment will not present any grave difficulty. But in the initial years conditions would have to be very materially improved, if the Teacher is not to be a rolling stone, but a steady careerist who finds a vocation in his profession.

A similar, if not so great, difficulty will be found in regard to the provision of Text-Books, Instruments, and all kinds of Apparatus. If the principle of education through the mother tongue of the pupil is adopted,—as it must be,—in all stages, very considerable enterprise must be undertaken, on a systematic scale, to provide books for study, at least in the higher stages, where the medium of instruction today is English. Even if a common National language is adopted, e.g., Hindi, with Deva Nagari script for education in the higher stages, this problem will face the country in every unit of the Union. It must be an integral part of the Overall Plan to provide all the necessary books in the local or National language, within a given period fixed in advance.

India is backward today, also, in the production of all other aids to education, like mathematical instruments and scientific apparatus. We cannot be dependent for all time to come upon foreign sources of supply for these our primary needs. The necessary industries must, accordingly, be set up as part of the over-all National Plan to make and supply these instruments, apparatus and laboratory equipment within a predetermined period.

### (vii) University Education, Scientific Research and Advanced Technical Training.

In the case of Technical and University Education, the problem has a somewhat different aspect. In the new method of Education, generally accepted in the Basic stage, technical training of an elementary kind will go hand in hand with ordinary instruction in all departments of knowledge. This policy will continue in the successive stages of the national educational system.

Specialised or advanced training, including experimental or post-graduate research, however, in specific branches of Arts, Science or Technique, must be correlated with the available employment, as planned in the National Programme for each given year; and for each particular item or aspect of the Plan. The present day phenomenon of highly trained men—often with the best local or foreign degrees in extremely specialised branches of Science and Learning,—wasting their time for lack of suitable employment must be rendered impossible. The main principle of the new policy must be: Every properly trained person must have a billet assured for him in advance, suited to his aptitude and training. If, after employment, any such person is sent out for still further training or specialisation in other countries, there must be no risk of unemployment, wastage, and frustration for such a person on return after completing the assigned course of training. None, however, need be sent or allowed to go abroad, until all available local facilities have been tried and fully utilised.

At the present time hundreds of students are selected for training abroad, particularly in Technical or Science institutions abroad, who, when they return, are by no means assured employment suited to their talents, attainments, or needs. This is due to lack of a pre-concerted programme, under which there would be proper co-relation between the available personnel and the tasks needed to be carried out. Money now spent by way of Foreign Scholarships to students being sent abroad is practically wasted, simply because no definite programme has been prepared and tasks allotted in response to which such students are sent abroad. It would be both more economical and more useful to the country, if, instead of thousands of students being thus sent abroad without definite tasks awaiting them, an effort was made to increase the resources of our local educational institutions by importing trained experts or specialists, not only to give theoretical instruction in the various branches of Art, Science, or Technique; but also to give practical demonstration by actual work wherever possible in the laboratories, factories, workshops, hospitals, or other institutions that may be set up under the Plan.

The organisation of University education has its own problems. Universities have been regarded all through the ages as centres of learning, where the utilitarian motive is claimed to be absent, or at least in the background. They have been constituted, organised, and conducted as semi-autonomous bodies, made up of the teachers and pupils working there, which would not gain in fullness or utility, if State control or regimentation was applied.

Under existing conditions; it must be noted, Indian Universities are little more than examining machines working on a mass scale, to standard pattern, producing by the thousands graduates and post graduates, who are more often than not misfits in life through no fault of their own. The highest stage of education needs, therefore, radical reform. The Universities themselves need reorganisation and reorientation to guard against the danger of their becoming victims of Party machines or power politics.

Definite correlation must be established, in this as in other stages of education, between training and actual employment; and that will no doubt go a long way to make the Universities not only popular and autonomous; but also make technical training sufficiently close to the actual work and useful.

### Technical Education And Scientific Research

The provision of the highest degree of Technical education, and the organisation of Scientific Research, must necessarily be an integral part of the Educational sector in the national Plan. The obligation in that behalf must primarily be that of the State. At the earlier stage, as remarked already, this obligation may be placed on the Employers, i.e. factory management and workshop direction in every item of the Plan. But the basic obligation must be of the State, carried out as, an integral part of the Plan, by whatever agency the State deems appropriate for the purposes in the several stages.

At the highest stage, this obligation may be discharged by some semi-autonomous Statutory body like a Federal or Union University, or special institutions, such as those now existing at Bangalore, Ranchi, or Dehra Dun. But in every case a measure of State control and supervision must be ensured primarily to see that these bodies and institutions function in conformity with the main Plan, and the researches carried out are mutually co-ordinated so as to make a consistent programme.

The tradition of University organisation and function has made those bodies, ever since their establishment in modern form in this country, autonomous institutions, at least in theory if not in fact. The first Universities, established in the three Presidency Towns, were examining bodies, which tested and certified candidates appearing at their examinations from the affiliated colleges, as having acquired a certain degree of proficiency in given subjects. In course of time a change came over these organisations. From merely examining machines they progressively became directly teaching institutions, which, even when discharging their teaching functions through affiliated colleges exercise an increasing degree of control on the latter through prescription of courses and standards for examinations, and laying down conditions of affiliation, and periodical inspection to see that the efficiency in teaching is properly maintained in the affiliated colleges. More than this, they have undertaken of late an increasing measure of direct teaching through Post-graduate Departments of their own, and the establishment and maintenance of advanced Research Institutions, particularly in Applied Science and Technology, which have rendered useful service in building up industries and utilities in the country.

The Universities, however, though increased in number very considerably in the last generation, number hardly twenty throughout the whole of India. Such as they are, they have not quite shed the influence of their original beginnings. The bulk of University activities is still in relation to under-graduate studies, most if not all of which is conducted through affiliated colleges. They themselves retain post-graduate work and scientific research in their own hands. Their being converted into more and more democratic organisations causes considerable anomaly in working, and brings upon them demands, which, however great their resources, they are not always equal to meet. Their resources consist mainly of examination fees, with a supplement from Government grants and interest from endowments, which all put together do not suffice to meet the ever increasing demands on account of ever widening obligations.

The basic policy of democratic Government naturally inclines in favour of devoting greater funds to the lower stages of education where we have a heavy leeway to make up. The result is that the higher branches tend to be financially starved, while private profit seekers get a wide scope for their own ends. In widening democracy with responsible popular ministries, this tendency is bound to be accentuated. The need, therefore, of reorganising and reconditioning University Education, with special reference to Technological and Scientific Research as integral part of the Overall National Plan, becomes incontestible.

Our Universities and other institutions of that level will have to be more throughly integrated with the entire educational system of the country; and their working, coordinated with the National Plan as a whole, so as to make every phase and every branch of learning, of science, art and technique, directly responsive. They need not be converted into departments of State; but may function as Statutory Bodies with well defined powers and functions, and adequate resources to do justice to them. The attempt at democratising the Universities was needed in the days when an alien power ruled the land. But with the advent of real power in the governance of this country in the hands of our own popular Ministries the anomalies of democratic machinery in these institutions of learning and research become more and more glaring. It is, accordingly, desirable to revise the basic constitution also, so as to entrust autonomous powers to a body composed of those directly interested, with adequate control in the hands of Government to keep these organisations into step.

Further comment on this the highest stage in education is unnecessary in this introduction. The subject is dealt with in Part II of this volume dealing with Technical Training and Developmental Research, where the utilitarian as well as the cultural aspects are fully considered. The National Planning Committee having had no opportunity to consider that Report, the present writer cannot venture upon this ground and offer his own views on this subject.

### (viii) Provision of Employment

For the results of University and all other stages of education not to be wasted, it is necessary to organise and provide adequate and appropriate employment for every citizen in accordance with his or her taste, training and temperament. For this aim to be realised, a comprehensive plan of all round national development in every field of Primary and Secondary Production; of Utilities and Services; of Distribution and Consumption, is an inevitable condition precedent. It must be put into operation simultaneously on all fronts.

The problem of the so-called "Educated Unemployed" which used to stagger the preceding generation, arose, not only because the supply of such educated persons had outgrown the demand; but also because the demand was necessarily limited, while the supply was progressively increasing. There was, in fact, no attempt at co-ordinating, or adjusting the needs of the country with its resources in this respect.

Under the new aims and objectives of National Education, the problem would not be to find employment for the select few, tested at examinations and found suitable for the few jobs available in the public service. Under a nationally planned economy, **it would be a problem of utilising the entire energy of the whole mass of adult population of the country.** The State, representing the community, must undertake the obligation to provide employment for all adult citizens, men and women, and enable them to earn their livelihood. The available resources and requirements of the country should be so organised and adjusted as to leave no one without work, who is not precluded by physical disability or mental deficiency from working.

Education and training must accordingly be so designed and so provided that, for the total available man-power, variously trained and qualified, there must be automatically available suitable employment as part of the National Plan. None must be idle; none can be parasite. None must starve, nor beg for a living. All must be trained and drilled to fit each into an appropriate niche, gaining an honest and adequate living, and adding at the same time to the sum total of the national wealth.

In other words, the National Education System would be carefully integrated with a system of **Social Conscription** which will be part of the National Plan.

### (ix) Scope for Private Enterprise in the National Education

The community, through its organised agent, the Government, intervenes in an ever increasing degree, till at least the task of providing sufficient education for every child in the community, with or without parents, has become a national obligation as well as a public monopoly. This monopoly must be exercised as much in the ordinary normal schools, wherein children from 6 to 14 years of age, or whatever be the age prescribed for compulsory education, are to be regularly educated, as in the Infant Schools, and the Secondary or University stages.

At the present time a good part of this obligation, particularly in regard to Primary or Basic Education, is, however, discharged by the State,—supplemented by Private Enterprise working for profit. The State acts, for this purpose, through Local Self-governing Bodies. In the higher stages of education, the State becomes less and less directly concerned; and private enterprise of individuals or societies takes a very considerable share. At the University stage, semi-autonomous statutory corporations are established to deal with that sector of our National Education System.

The profit motive in Private Enterprise ought to be wholly eliminated from such a social service as the programme of National Education. So long, however, as the State is unable by itself to shoulder the full obligation of educating every member of the community upto the prescribed stage required under the Plan,—including Secondary, Technical, University Education and Research—a certain degree of Private Enterprise may be unavoidable. But even in that case it ought to be kept under rigorous control, if the main Plan is not to be frustrated or perverted.

Not all private enterprise in the educational field, it must be recognised, is inspired by greed for monetary gain for the founder or proprietor of an institution. And where such enterprise is inspired by Missionary zeal, or influenced by a desire for new experiments in educational technique or content, scope should be available for such endeavours, even though outside the main Plan. As these would be exceptional rather than normal; and as, **ex hypothesi**, there is no taint of profit-seeking for the promoters of such experiments, the State would lose nothing by suffering them to have room for self-expression. Only, if Missionary zeal expresses itself, under the guise of education, in any kind or degree of direct or indirect proselytising, it will have to be rigorously checked.

Because of limited resources; and also because of the more urgent claims of elementary education for the masses upon the Public Purse, scope for private effort may be left in the higher stages, where considerations of cost preclude the State from assuming directly the wholesale obligation, and prevent it from making such education free and compulsory to every child in the community. Here the education must be equal and uniform for all, free from any bias of class exclusiveness. And that can only be provided in public schools open to all.

In the Basic stage, however, no room should be left, on any ground whatsoever, to private enterprise. The entire programme of such education must be carried out, for the full period, exclusively through public agency, whether of the Unit Government, or of the existing Local Governing Bodies, or Special School Boards statutorily established for the purpose.

## X. FINANCE

'The toughest problem in re-organising the planned programme of mass education in this country is Finance. When Basic Education is accepted as a national obligation, and provided free and compulsory to every child of school-going age in the country, for a prescribed period of seven years; and when in consequence proportionate expansion takes place in the successive stages of higher education, the need for funds will increase in proportion.

The problem of Finance is, of course, universal; and affects every stage of education in every branch of science, learning, art and technique. The amount now spent from all sources in all the Provinces together is Rs. 31.62 crores. It averages hardly twelve annas per head of the population in British India. It is obvious that this is utterly inadequate if the indispensable minimum of educational expansion, as outlined above, and as mentioned in the reports following, is to be attained. New sources of revenue will have, therefore, to be discovered. Even if all possible economies are made, the saving made will not suffice to meet the much larger demand on this account upon the National purse. The system of Compulsory, Free, Universal Basic Education alone will cost not less than Rs. 300 crores per annum when it is in full blast; while even in the initial years the cost will not be less than hundred crores per annum for all States and Provinces put together. The exact percentage of the National Budget (as distinguished from the Governmental Budget) that ought to be devoted to Education is difficult to say; but 10 per cent of the total wealth of the country devoted to this item, which in reality is the most productive investment that can be found in the long run for any country anxious to build up a vigorous new economic life for itself, is by no means excessive. If the National Budget amounts to between Rs. 3 and Rs. 4 thousand crores to-day, at the present level of prices, this would mean setting apart something like Rs. 400 crores for the cost of education, a small fraction of which can be found from possible economies. Coupled with public health, which will be similarly dealth with in another volume in this Series, the total charge on account of these essential Social Services for the country will be somewhere near Rs. 1000 crores by the end of the first stage in planning. And that would be by no means extravagant.

Definite ways and means have been suggestd in a Note appended to the section of Priorities Report dealing with education, which may or may not be acceptable in all its details. But the principle would be incontestible that new sources will have to be found or methods developed, which will suffice to provide for this enormous need of the country. It is true that in the initial years of the Plan being put into effect not the whole of this gigantic sum would or could be spent for this purpose. That, however, is only a reason to show that we must build up our resources, progressively accelerating them so that the end expected may be realised without difficulty within the time limit set for the purpose.

There is not much room for economy, or retrenchment in the existing services. The lower ranks in the public service in all departments,—Provincial as well as Central—are so poorly paid, that even if any economies are possible and effected, they would not fill the gap. In the case of Education, the pay and prospects of the lowest ranks of teachers are notoriously inadequate and unattractive. Reference has already been made to the phenomenon of wastage and stagnation in our existing primary schools, wherein the real return on every rupee spent is scarcely three annas. If this wastage is to be remedied at all, the present teacher, inadequately paid and generally neglected, will not serve the turn. It would, therefore, be good economy, from the point of view of results, to revise radically the system of teachers' salaries and general prospects of that service.

At the time of writing the above, the report of the Pay Commission was not out. That Report has since been out, and is expected to add Rs. 30 crores at least to the Central Budget, mainly because of substantial increases in the basic pay of the lower ranks in Government service. Similar additions will have to be made by all Provincial and State Governments for their staff. There has been some prospect of reduction, following the Report of the Pay Commission, in the top salaries. But the saving thus made will be swallowed by the increases in the lower scales.

Highly productive new sources of revenue, therefore, must be discovered; and existing ones considerably expanded, if this hiatus is to be filled. An appendix to the Priority Report of the National Planning Committee Sub-Committee offers some suggestions for this purpose. Even if those suggestions are not adopted integrally, similar lines will have to be developed, since existing direct and indirect taxation seems to have reached saturation point, and further yield by manipulation of rates of these is unlikely. State enterprise of a productive and profitable character in an ever increasing extent seems to be the only way of finding the necessary funds—not only for mass education, but for all other items in the planned programme of national development, which is sketched in this Series. Such Enterprise in productive industry will not only add to the national wealth; it will also leave a greater balance in the hands of the individual which no system of taxation can achieve. All taxes are compulsory deductions from the wealth of the individual; **per contra,** all profits of Public Enterprise are **additions** to the wealth of the individual. This, however, is a theme which will be much more fully developed in another Sub-Committee's Report; and so we need say no more at this stage on this most crucial subject for planning as a whole.

K. T. SHAH.

# INTRODUCTION.

## GENERAL EDUCATION AND TECHNICAL EDUCATION

In one volume are comprised here the Reports of two Sub-Committees, (A) on General Education, and (B) on Technical Education and Developmental Research.

The former contains a general survey of the position in regard to mass education, and the basic principles of policy, and administration. No matters of details are discussed; but almost all the important topics concerned with the problem of Mass Education in this country have been considered.

The latter deals with the more specialised, advanced problem of Technical Training and Scientific Education, Research or Higher Education, part of which may be treated under University Education: but the bulk of it has to be dealt with separately.

In this Introduction both are reviewed separately, and an attempt made to assign its proper place to either in an over-all National Plan.

## I PERSONNEL AND MEETINGS

Dr. Shyama Prasad Mukherjee was named Chairman of the General Education Sub-Committee, in the first instance; but as he was unable to take charge of his duties, the Sub-Committee was presided over by Prof. Sir S. Radhakrishnan when the Terms of Reference made to it were actually considered. The personnel of the Sub-Committee is given in the Interim Report.

The Terms of Reference as laid down by the National Planning Committee require the Sub-Committee to deal with General Education, to correlate the work of the Wardha Committee, and the Expert Committees appointed in the Provinces, mobilisation of labour for social services &c.

The Reference being couched in such very wide terms, the Sub-Committee proceeded to appoint, from among its members, group Committees to study and report on specific aspects of the general problem. Except the Group Committee on University Education, all other groups had reported when the main Sub-Committee took up the task entrusted to it. Its own Report was fully discussed at a meeting in Calcutta; and was then submitted to the National Planning Committee, which reviewed it and passed its own Resolutions on the subject, as given in their appropriate place in the pages that follow.

## II EVOLUTION OF NATIONAL POLICY ON MASS EDUCATION

In considering the place of Mass Education in a comprehensive National Plan put into effect simultaneously all over the country, the first problem that will confront the National Planner is in regard to the question of a national policy governing the entire system of national or mass education.

At the famous Karachi Sessions of the Indian National Congress in 1931, a resolution was passed by that body on the Fundamental Rights of Citizens, which states, in its Preamble, **inter alia,** that, "to enable the masses to appreciate what Swaraj, as conceived by the Congress, will mean to them, declared, that in order to end the exploitation of the masses any constitution agreed to on behalf of the Congress should provide, among other things, for free and compulsory primary Education." The country's governing policy in this behalf has ever since been guided by this ideal, which the Congress has accepted by this declaration.

The problem is difficult and complex in itself, when considered with reference to a country so vast as India, with its teeming millions, variety of languages, climates and economic conditions. Add to it the social, political and constitutional complications, and the complexity would be easier to imagine than to analyse, or explain.

The Sub-Committee, when it considered the matter seven years ago, were not quite aware of the latest political and constitutional developments, which are now aiming at a partition of the country on lines of religious differences. The sentiment for Provincial Autonomy, which has been fostered and encouraged by our own political leaders, precludes the formulation of a uniform National Policy and programme, and much less its uniform execution throughout the country. It is, indeed, a matter for grave consideration, whether, in the face of our multitude of languages and the enormous numbers to be dealt with over a huge area, under a bewildering variety of customs and usages, conditions and circumstances, it is desirable, in the interests of the people to be educated and the resources to be developed, that a uniform policy and administration should be aimed at in our Public Education system. But even conceding the force of these factors, the Planner cannot but long for and strive to attain some degree of uniformity in the basic ideals and objectives, which will dictate the policy of the country in this behalf. The following observations, accordingly, sketch the evolution of the National Educational Policy, ideals and objectives, which may well be harmonised in a common National Plan.

## III FIRST STEPS IN SYSTEMATIC PUBLIC EDUCATION

Without going into the earliest attempts at an organised system of mass education in the country, we may begin with the latest phase, when public consciousness of this need began to be felt widely. The indigenous systems of of this country had provided for individual education according to the ideals and conditions of the day. It was, however, with the establishment of British dominion in India that attempts began to be made at an organised, nation-wide system of education in this country.

Education, in many of its more salient items, was made a "Transferred Subject", when the first dose of Provincial Autonomy was introduced in the Indian Constitution by the so-called Montague-Chelmsford Reforms of 1919. Public Education became a direct responsibility of popular Ministers, who felt themselves in honour bound to make good the criticisms they used to urge against the irresponsible Bureaucracy. Their powers and resources were, however, limited. Nevertheless the new responsible Ministers sought to develop, in their own way, this great nation-building department. But their ardour was damped by the lack of funds, of sufficiently trained teachers, of the necessary buildings, of equipment and apparatus, not to mention the absence of any well-considered policy, plan, or programme for achieving their aims.

There were many defects and shortcomings inherent in the working of this Department, and the objective it was seeking. The system of education, as it had developed till then, had brought about a top-heavy structure, which had more or less neglected the foundation of a really sound educational system. There was no compulsory, free primary education to the mass of the country's children. Education, such as it was, was the privilege of the few,—those who could pay for it. Its transformation into a Fundamental Right of every child has yet to be achieved in daily life. Because modern education was the only gateway to a decent chance of employment, all who went in for education aimed at reaching its highest level. Not all succeeded, of course, in completing even their Primary stage. In 1942-43,—the latest period for which figures are available, there were, in recognised institutions, boys and girls in the following figures :—

| Ttal Scholars in :— | Boys | Girls |
|---|---|---|
| 1. Primary Schools | 8,566,938 | 3,027,420 |
| 2. High Schools | 1,109,265 | 170,581 |
| 3. Percentage of 2 to 1 | 12.8 | 5.7 |
| 4. Colleges | 134,842 | 13,892 |
| 5. Percentage of 3 to 2 | 12 1 | 7.65 |

This does not differ materially from the position in other countries as shown below :—

| *Total Scholars in :— | U. S. A | France | Eng. & Wales (1945) | Canada |
|---|---|---|---|---|
| 1. Primary | 20,356.500 | 4,870,082 | 5,022,068 | 2,013.541 |
| 2. Secondary | 6,92,3,538 | 346,447 | 1,008,000 | — |
| 3. Ratio of Secondary Scholars to Primary Scholars | 34.19% | 7.11% | 20% | — |
| 4 Universities Technical classes and colleges etc. | 1,259,045 | 102,731 | 40,019 | 106846 |
| 5 Ratio of University Scholars to Secondary Scholars. | 18.18% | 30% | 4% | 5.3% |

*These figures have been taken from the Statesman's Year-Book 1945.

The purpose of mass Education was not all properly planned out. From the very start, Western education in this country aimed at making out of the educated section of the Indian people recruits for the military defence and conducting the British Administration. Clerks and soldiers, with a small leaven of professional men, made up the bulk of the "educated", who acted as the agents of the British in this country. Animated by the ideals and influences which inspired the Britisher in his own country, these indigenous recruits and agents in India observed the same traditions, and carried out the same policy, though in a more intensive form. Class, rather than mass, education became rather the rule or fashion, and remains so to this day.

## IV. TOP HEAVY SYSTEM

Such policy necessarily resulted in an over-emphasis on purely literary education; and that, too, in a foreign language. The schools and colleges became so many factories for mass production of a standardised pattern. Little or no attention was or could be paid, in that System, to real education—or training and development of the inherent faculties of man, as distinguished from imparting literacy in an alien idiom. The tests prescribed, moreover, were trials, not of real learning, ability or originality; but of the mechanical facility to reproduce what had been drilled into one's memory at annual or periodical examinations, conducted by means of set questions and standard answers. In such a system, individual initiative was neither wanted nor independence encouraged. Imitation, repetition, routine, dull and lifeless; routine without end or variation, was the absolute rule, and precedent the reigning divinity.

Such an objective of the National Educational System may be accepted when the purpose of the Power-that-be in the land was to secure recruits, spokesmen, or agents, in the task of the country's administration by an alien power. When, however, the people of the land come to shoulder direct responsibility, and wield authority in their own governance, the problem of mass or national education would wear a wholly different aspect. We have to convert the mass of mere literates into a body of independent, intelligent workers, responsible citizens of a free democracy. We have to mobilise the entire man power of the country to fit into an over-all national plan, to work it intelligently each in his or her own appropriate role; so that they become real architects of their own as well as their country's prosperity. Still more, we have to recast the entire machinery, together with its basic ideals and dominating purpose, in which the new generation is to be trained, educated, and fitted for its tasks in the New Age, now dawning upon this land.

The task of the National Planning Authority in this sector of the National Plan would, therefore, be threefold: to redefine the aims; to redesign the method and content; to reshape the entire purpose of organised and systematic national education.

With the introduction of the successive instalments of self-government and Responsible Ministry, the need for a revolutionary change grew and extended apace. Our leaders had been far too long, however, in futile opposition to be able all at once to think out and apply their own constructive alternative. Our people had been much too long under the leading strings of a foreign power to be able to find their way through strange grounds and unchartered seas. Add to this, the deliberately encouraged sentiment of Provincial Autonomy, of local patriotism and parochial outlook, and you will easily realise the difficulty of working out a new, uniform policy for Public Education.

The position has been aggravated in the years that have followed the advent of full Provincial Autonomy under the Constitution of 1935, still in force. Thanks to that influence, in the new constitution now being worked out, the basic principle of local autonomy in all such matters has been accepted much too fully to allow an immediate evolution of a uniform national policy and common administration in the National System of Education!

## V. NEW OBJECTIVES AND NEW METHODS

Despite this handicap, the inherent urge for a common policy and integrated system have asserted themselves. The Government of India have re-established since 1935, their Central Advisory Board of Education, which has tried, notwithstanding the independence of the Provinces in matters educational, to bring about common objectives and co-ordinated effort. This has been achieved by periodical conferences between the Central Educational Advisory Board, and the corresponding representatives of the Provinces. Beginning with inter-change of views on the main problems affecting the country, this method has brought about an increasing measure of agreement in policy as well as on details. To the extent that agreement is arrived at between the conferring representatives, the Board has been able to make effective and substantial recommendations to the Central Government for being adopted and given effect to, by the latter as well as by the States and Provinces agreeing. The role of the Centre is thus initiative, investigating, integrating and aiding financially.

A new Educational Policy and Programme has thus come to be evolved, acceptable throughout the country. The Centre is able to induce agreement, not in virtue of its Constitutional Authority, but by its better sources of information, as also by its larger resources. The latter has promised judiciously to distribute considerable sums to advance specific items in the programme in particular Provinces.

However induced or persuaded, the Provinces and States are free agents, accepting the Centre's recommendations voluntarily, and carrying them out only so far as their local conditions, circumstances and requirements allow. The Central Education Board, it cannot be repeated too often, is purely Advisory; and its recommendations to the Central Government, and, through the latter, to the Provinces and States, are in the nature of mere suggestions. These have only such weight as may be derived from the status and reputation of the individuals who have considered and worked out the various suggestions submitted by the Provincial Representatives and Central Authorities on the subject.

## VI. FINANCIAL GRANTS

"The Central Government have an intangible influence in respect of their ability to make grants-in-aid to the States and Provinces to prevent the latter making an excuse of lack of funds in giving effect to their recommendations. The Indian States are not yet on a footing with the Provinces, so far as their claim upon the Centre for financial aid is concerned. But a good few of them are anxious to maintain an even pace; and so the programme becomes more or less uniform all over the land.

It is, indeed, no longer possible for the Centre to make their grants conditional upon their own initiative, and reserve any powers of control or supervision in consideration of such grants. Grants may be earmarked for particular purposes, or for specific lines of advance, and, if they agree, the Provincial Governments would have to act on the lines prescribed, or carry out the object named. To the States, the Government of India make no such direct financial grants. But there are other ways and means to make the States also fall in line, if only in respect of their claim to have a comparable standard of administrative efficiency and social progress.

The evolution of common lines of advance, and uniform national policy becomes a matter of voluntary agreement due in a great measure to the fuller realisation of their own responsibility by the new rulers; and also to the increasing perception of political leaders of the country's need. The benefits of Swaraj cannot all be taken on trust. Slogans must be translated into actual achievements. And hence the impetus to a new impulse of reconstruction, growth and development, which is perhaps noticeable in no other field so clearly as in that of National Education.

## VII. PLANNED ADVANCE IN EDUCATION.

The specific items in the planned programme of National Education may next be reviewed.

The principal problems in regard to National Education may be summarised at this stage as follows:—

(i) Formulation of the Principles governing the National Policy of Education;
(ii) Its objectives;
(iii) Method and contents of the several stages of National Education, Basic, Secondary and University;
(iv) Continuation of education after the school-going age as a matter of the cultural development of a human being; general cultural activities amongst the masses;
(v) Education of the Defective, the Backward or the Problem Child;
(vi) Supply of trained teackers; of text books, instruments, and apparatus;
(vii) University education, Scientific research, Technical training, including education abroad;
(viii) Provision of employment for those educated;
(ix) Scope for Private Enterprise in National Education;
(x) Finance.

### (i) Policy: Basic or Elementary Education, Free, Universal, Compulsory.

Every child of the prescribed school-going age, say between 6 and 14 years of age, must receive a prescribed modicum of education and training, as the irreducible pre-requisite of full citizenship. It is not enough to bring the child to school; it must be kept there till it has attained the prescribed minimum stage of enlightenment and training. The exact degree of education to be given to every child might vary from Province to Province. But there can be no difference of opinion as regards the elementary dictates of the National Educational Policy. This can be given effect to, only beginning with the child of six years. The problem of educating upto the prescribed minimum of (a) all children over six years of age at the date the policy is put into operation; and (b) of the adult and adolescent illiterates, will still have to be faced, at least for such period as the entire population is educated up to the prescribed minimum stage. This will be an item of the all-over National Plan; but not necessarily part of the Mass Education Programme.

Whether or not the recipient of such education or its parents or guardians are able to provide for such instruction and training being given to the child, the State (or the community collectively) must shoulder the obligation. It must assure to each citizen, education and training upto the predetermined minimum, deemed indispensable for preparing a civilised human being for shouldering the tasks of life.

The exemption of the parent from any charge on account of education should include not merely the immunity from school fees; but also the provision of such tools and implements of education as books and apparatus, which the pupil would need in the course of his education.

No exemption should be allowed in this regard on grounds of social custom or prejudice, e.g. for women.

3. Further, lest the temptation to the parent to utilise the labour of a child for eking out the very slender budget of an average Indian Family prove irresistible, and the programme of mass education upto a predetermined minimum prove futile, this education must be made compulsory if the child concerned stays with a parent or guardian.

   No exemption from this civic obligation be permitted by law, except on stated grounds of congenital defect, permanent invalidity, or sub-normal intelligence. These are not real exemptions; but should be remedied in specialised institutions. The parent violating or denying this right of the child must be punished under specific provisions of the law; and no compensation need be offered for the loss of the child s earnings by its going to school.

   Needless to add, the right of the child is the obligation of the community which cannot be evaded or escaped from. The State, whether Central, Provincial or Local Government, must find ways and means to make this a reality within a period rigidly prescribed under the Constitution; and deemed unavoidable by the Plan.

4. This right is equal, uniform, and universal, irrespective of class, creed, or sex. Too much care cannot be taken to see that no sense of social snobbishness or class consciousness enters at this stage. No exclusive institutions must, accordingly, be permitted on any pretext of ritual or ideological differences.

   The National Education must be common and equal to all. If any supererogation is added, it must be certified first to be entirely without a trace of anti-social nature, before it can be allowed to be given to any section of the community. And such supererogatory education must be **in addition to, and not in substitution for,** the ordinary education given to all citizens.

   Room may, indeed, be left in this system for experimentation in the art and science of Public or Mass Education. The National Educational System of India must not be rigid or lifeless: Provided the minimum prescribed is made available to every child in the community, opportunity must be available to educationists to try out experiments in method, materials, or subjects in systematised education.

### (ii) Objectives of Systematised Education

Assuming that the provision of universal Primary Education is an inescapable obligation of the State in India, the next question concerns the purpose and object of such education, its method and content.

The aim of a national education may compendiously be defined to be threefold :—

(i) to develop the inherent faculties of man so as to enable him to express, fulfill, and realise himself;

(ii) to make him a good and useful citizen, and a decent social unit;

(iii) to equip him for the battle of life and enable him to bear worthily the obligations of a member of a real, working democracy.

This triple aim can be achieved, not merely by instruction or training the inherent faculties of intelligence or memory, but also by developing the physical faculties, and thereby associating the child to be educated actively in the process of its own education.

For this purpose of effective education, every educationist is agreed that knowledge imparted can be fully retained, and instruction given properly grasped, only if it is conveyed through the medium of the child's mother-tongue. It should be reinforced, so to say, with the aid of some craft, or group of crafts, in which the mind as well as the body, intelligence as well as the memory, sense of aesthetics as well as of utility, may be trained and developed. Then only will Education be real as well as lasting, and all its purposes effectively served.

To a large extent these objectives, and the technique of public education adopted in pursuit of them, are different from those now prevailing. The aim of Education, all through the British age in Indian history, was to impart literacy through the medium of the Rulers' language, which was foreign to the mass of the people. The degree of literacy imparted was sufficient to enable the person so "educated" to be an useful agent and efficient tool of the foreign ruler in his task of administration. With this objective, memory, as tested in mass examinations by stated questions, was most important, the most serviceable organ in imitation, repetition, or routine. Intelligence, initiative or originality could not be encouraged; and so they did not receive their due.

But these aims must be now reversed. Education must be undertaken for the entire mass of the people, so as not only to bring every child of school-going age into school, and keep it there for a prescribed period; but also bring out the best in each individual, and enable him to fulfill his purpose in life. It will make each a useful member of society, fully aware of his rights and obligations; contributing his due share to the common need, and sharing also in the common wealth in accordance with his own need.

While education is thus made as much subjective as objective, as much cultural as utilitarian,—it is not divorced from the material needs of human existence in the present stage of our social organisation. The problem of employing and utilising the entire man and woman-power of the community, in work suited to the aptitude and training of each worker, cannot be ignored. Its solution, however, would be particularly easy under a fully planned national economy. A comprehensive Budget regarding the need for personnel in each trade, industry, profession, vocation service or utility, must be prepared in advance as part of the Plan; and only qualified personnel be asssigned to each.

### (iii) Stages of Education, Method and Content

The various stages of organised education,—available, both as a fundamental right to all living within the country, and as a matter of all-round national development,—must next be defined; and mutually integrated, so as to form a consistent and comprehensive whole. Each Stage must be properly correlated with the material side of the National Plan, so that the **personnel** aspect of the Plan need not cause any impediment; and problems like the present day question of the "educated unemployment" may become impossible.

As observed, education does not consist only in Literacy. The inherent and indestructible powers of the soul and being of every man and woman must be fully developed by systématised education. No less important is it to attend to the bodily, as to the mental, faculties of every child in the community. This wider conception of the scope of the national educational system was all but neglected in the age now coming to an end. A radical change must be effected, and the necessary knowledge and training, at least upto the prescribed minimum, must be made available to all.

At the same time, all must be enabled to make the best use of the education and training they receive for their own as well as their country's good. It may, indeed, be made an axiom of the national policy of education, that the child belongs to the community as much at least as to its parents. The task, however, of its upbringing in health and fitness is, as things stand, hardly ever carried out satisfactorily by the parents. For, the average parent is neither qualified, nor even willing to shoulder this responsibility. We must, therefore, postulate this duty as an obligation of the community collectively; and no evasion or modification of it be permitted.

### (a) Pre-School Stage

At the present time pre-school education is a luxury, available only to town dwellers, if at all. This must also be made as wide-spread as possible.

Because of lack of adequate resources, beginnings have to be made in this department on a limited scale in those centres of work or population where numbers can be found sufficient to allow satisfactory arrangements being made for the schooling of infants. Whether the mothers are working women, as may quite possibly be the case in an increasing degree under planned economy; or whether they stay at home, the care and upbringing of the child, in the years before compulsory education commences, is a task that not every mother is fit for. It must, therefore, be part of organised effort, through a Municipality, or other local self governing body. In the alternative, such other agencies will have to be developed and aided as may already be at work in that field.

Wherever considerable number of workers are concentrated in a factory or workshop, the obligation in regard to pre-school education of the workers' children may fairly be laid upon the Factory or Workshop owner, whether private individual, joint stock concern, or some public authority. For reasons of economy two or more such concerns may combine to discharge this duty with greater efficiency. If and while the State cannot undertake this obligation entirely on its own shoulders, it may make grants to such establishments maintained by private individuals or concerns.

In the country, on the other hand, with scattered population and considerable distances intervening, the organisation of suitable education for children under six is a much more difficult task. But even there a beginning must be made. Parents or guardians must be accustomed to look upon this item as a kind of social obligation, which they must help to discharge to the best of their ability. Local Bodies must be aided and abetted for the purpose; targets fixed to develop it progressively; and all other arrangements made so as to universalise the system as soon as possible.

There is, indeed, no inherent opposition between the educational requirements in this stage of an urban or a rural child. The differentiation made above is due simply to the concentration of population, which makes it more economic and feasible in administration to begin the programme there, and extend it subsequently to the country at a later stage.

Nor need it be assumed that the differentiation between Urban and Rural life is eternal and immutable. In proportion as Agriculture and its allied occupations become mechanised, standardised, and on mass scale, i.e. in proportion as they become "industrialised", the divergence between the ways of life and moulds of thought will diminish, till it disappears altogether. Civilisation is town bred; and progress the result of co-operative social endeavour. If that proposition is accepted, the village itself may be transformed, in course of time, and by the growth of industrialisation.

So long, however, as the present differentiation exists, some difference in the methods, instruments or contents of pre-school education may be permitted. Care, however, must be taken from the start to see that such differences do not become stereotyped.

### (b) Basic Education to be Universal and Compulsory

The most urgent and important item, universally accepted in principle, is that the entire child population of the country should be brought into school, and should be kept there for a prescribed period. This is calculated to suffice for instilling a modicum of elementary knowledge indispensable for an intelligent exercise of a citizen's rights in a modern Democracy. With our present day consciousness of the need for proper education; with the new responsibility of an equal member of the sovereign authority in a democratic State; mere literacy, or the inculcation of the so-called three R's, will not suffice. Even if we cannot attain all at once to Plato's level of educating the masters in a modern democratic State upto the degree of a philosopher-king, we cannot be content with the simple skill in reading or writing one's own mother-tongue, or making easy calculations. If Democracy is not to be an empty name, or the plaything of Party bosses; if our Civil Liberties and Fundamental Rights of Citizenship, so dearly purchased, are not to be denied or perverted by dictators or reactionaries; if the freedom and opportunity which the new regime of national independence and planned economy offers for material improvement and cultural growth, Public Education must be broad-based as well as widespread. It must be available to all, not in name only but in reality; and become every individual's means to achieve self-realisation and self-fulfilment, which is today the privilege of a microscopic minority. The method, content and extent of this stage having been already dealt with while discussing the policy and objectives of the National Educational System under planned economy, no further observations are needed in that behalf.

Another difficulty in the system of education hitherto prevailing was that, while it provided elementary education for a relatively small percentage of the community, it made those thus educated almost invariably seek higher stages of education in the Secondary school and the University. This was due to the fact that the only available channel of employment was limited, and open only to those thus educated. The aggregate available employment was very much smaller than the numbers qualified for it year after year. The spectacle of mass unemployment and frustration began in consequence to be wide-spread and increasing throughout the land. Figures given above indicate the number of those receiving primary education, as also of those going for the successive stages of higher organised education. The wastage and stagnation in the primary stage are not brought out in these statistics; nor do they tell very clearly the tale of those unsuited for University education. A fairly large proportion of those who enter the Elementary Schools hardly ever progress beyond the first year. Those who reach the end of that stage aggregate hardly more than 15 out of every hundred joining in the first year. Even those, who may thus be said to have completed their full term in the Primary stage, and leave school at that point, do not always retain in after life the knowledge they had acquired during that stage. There is to-day a woeful divorce between daily life and school in this country. It will be the first task of planned education to remove this anomaly. It is, therefore, necessary to make the system of education reflect the atmosphere and conditions of home and usual work as nearly as possible in school, so that the normal work which every citizen must do in later years, would not be unfamiliar or disappointing.

It will be no small merit of a predetermined Plan, with an elaborate Personnel Budget, which sees to it that for every person a job is ready even as he or she leaves the school, at any successive stage in education and training; and so reverse the course of recent history when there were more persons than jobs, so as to provide at least as many jobs as there are persons qualified to fill them.

### (c) Secondary or Technical Education

In this view of the National Education system the right of every citizen to be educated free of cost would have to be necessarily restricted,—at least in the initial years of the Plan,—to such a degree of education and training as the resources at the disposal of the community permit. This is not because of any lack of appreciation of the real value of education in all branches, and upto the highest stage. It is simply and solely due to our limited resources, which, when properly organised and fully developed, will make Education as varied, and of as high a degree as anywhere else in the world.

Notwithstanding considerations of cost and limited resources, in the higher Secondary stage, also, the State cannot abdicate its function, or deny its obligation altogether. Pending the assumption of the obligation wholesale, the State must reserve to itself, not only the right to control and supervise all institutions, run by private enterprise, providing Secondary education; but also see to it that the profit motive is kept within rigorous bounds. It must also prescribe standards, lay down the general policy, and hold official tests to certify given degrees of proficiency or efficiency. There should be no place for anyone in the planned economy of the country without an appropriate certificate of such proficiency or efficiency.

To carry out these aims effectively, the State should have some Secondary insitutions of its own, where selected scholars may be given, at public expense, higher education and technical training to meet the needs of the community in the various sectors of the Plan; and also that of individual scholars in accordance with the latter's inherent aptitude, training, or temperament.

For the rest,—youths not specially distinguished but yet seeking higher education for themselves,—some fee may have to be charged, so as to meet a given proportion of the cost of such education. Whether the State charges fees to these directly in its own institutions, or permits privately owned institutions who cater for this class to do so, is immaterial. The principle is simple: Higher education is not universal, nor free. Some hardship may, no doubt, be caused in this stage to otherwise deserving pupils because of lack of ability of the parents or guardians to bear this charge. A number of promising children may thereby have to be left out of the advantage of Secondary education or Technical training. In such cases the State should provide scholarships, grants, or otherwise aid these promising elements, in addition to those selected by itself for higher education; and so fit them to meet the planned needs in regard to skilled personnel in the various branches or items of the planned programme.

Even in those advanced countries where Basic Education has been free, universal and compulsory for generations, not more than 15 per cent to 20 per cent of the total school-going population seeks Secondary or Technical Education; and a like percentage of those in the Secondary stage go up to the University. An aggregate of 15 per cent of those in the primary stage for the next higher stage in the system, and of 10 per cent of that stage for the highest stage of University education and Scientific Research or advanced Technical training, would, in the initial years of India's National Plan, be sufficient for the various sectors of the planned programme of material development in respect of higher trained personnel to serve as foremen, departmental managers, or middle grade technicians.

A special Committee of the Central Advisory Board of Education has already suggested the method and principles of making such selection, which are summarised, at the end of this volume. The total numbers in the Secondary stage would not exceed 25 per cent of those in the Basic Stage, or the total number of school-going children between 6 and 14 years of age.

*Even as regards those who have been elected to* acquire higher education at their own expense, it would be necessary to encourage and determine the particular lines in which these students should specialise, so that, after the period of training and education is finished, the individual thus prepared will be absorbed in the general programme. The choice or determination must be made, not by individual vagaries or parental fancy, but by the predetermined requirements of the planned programme; so that no one should, after the period of education is over, remain unemployed and burdensome for lack of suitable occupation. This would be no small item in the overall National Plan, in the sector of Education.

Given the large numbers of persons likely to be thus available, there will be no difficulty in absorbing them in appropriate and necessary occupation notwithstanding differences in individual taste, temperament, or training The planned programme, with an elaborate personnel Budget for each year, will be sure to offer every variety of work to suit the several degrees of training and qualification; and meet every variety of local preference, special aptitude, or individual temperament.

With the reorientation in policy and programme suggested above, the disproportion, as it appears now, between the Secondary or University stage in education, and that of mere literacy, would disappear. It would be the function of the Planning Authority and Administration to see to it that, while the entire mass of the country is given the benefit of an irreducible minimum of Basic Education and training, a sufficient,—but not excessive, proportion is also brought into the Secondary or still higher stage, in accordance with the planned needs of the country.

The present spectacle, again, of stagnation and wastage in the school-going population, must be remedied. The total expenditure on Public Education today hardly brings in a return of as much as 3 annas for every Rupee spent. This must be reconditioned, so that every pie spent on the National System of Education yields its due return. The arrangement must be such that, in the final analysis, such numbers should be trained up in the higher stages of arts and crafts, technique and science, as well as of general education, as would be required to meet the various demands, in all its items and aspects, of the National Plan.

University education and Scientific Research are dealt with separately.

### (iv) Adult Education and Cultural Development

The problem of Adult Education, as it is considered today, consists mainly in the imparting of mere literacy to those adult citizens who have not received the benefit of elementary education in their childhood. As the latter itself is not yet universal and compulsory, the proportion of adults bereft of this benefit runs into millions. Nearly 4 out of every five males are lacking even in literacy; and 9 out of every ten women are in the same category. And this does not include those children, who, having nominally been to school, were unable to complete even their primary schooling; or who in after life are unable to maintain the little literacy they acquired at school.

These illiterate millions of adults, both men and women, cannot, however, be left unlettered or untrained all their life, when the government of the country, and the fate of all its millions yet unborn, depend upon their votes. If democracy is, as already observed, to be a real force in our country, even mere literacy for these myriads will not suffice. Adult Education, in our changed condition, will consist, not merely in the provision of the elementary learning of the three R's, but also that amount of additional knowledge and technical training which is comprised in the Basic Stage. It would also have to be a continuation of the systematic education and training, from the point that a citizen had had to leave off owing to circumstances beyond his control; so that the fullest possible cultural growth of every citizen is assured.

This threefold task of imparting simple literacy and the three R's; a minimum of material knowledge and technical training; and a continuation of the education from the point a citizen had had to discontinue, will require a practical duplication of the machinery evolved to provide compulsory universal Basic Education. The only difference would be that such education would be completed in a much shorter space of time than in the Basic Stage for the children, as the maturer intelligence and wider experience of the adult would permit of a more condensed form of such instruction.

The primary responsibility for providing this education to the adult mass must be that of the employer in the case of all organised industry; and of the Local Bodies, or Societies specially formed for the purpose. Government must, of course, provide the ground plan, the method and machinery of such education, and help in finding teachers,

—though that ought to be less difficult in this case than in the case of the ordinary child's education. They may even provide some sort of a subsidy to the employer,—at least while the regime of private property and profit-seeking continues. The employer must be made responsible by law to see to it that the education and training needed for his particular type of work are given in his factory or the workshop, to the workers engaged there. Time and room for the purpose must be found from the working hours; if that be not quite feasible during the initial years of the Plan, ample facilities should be provided to enable workers to attend the Factory Schools, Clubs, Intellectual Centres, Picture Classes, or other such arrangements.

The Adult education programme will, in this sense, be a part of the general cultural activities, which every Local Body, Statutory Corporation, Industrial Trust or Syndicate, Bank, Factory or Workshop, would be required to carry out as part of its normal duties. It need not, however, be an integral part of the National Educational System in charge of the Ministers of Education. Non-official Organisations may well arrange this matter, with general sympathy and some financial support from Government or Local Bodies. The ingredients of this item would be, not so much of set courses or curricula, as lantern lectures, exhibitions, concerts, museums, illustrated demonstrations, radio talks, and the like, on a variety of topics, which are of interest in the daily life of the masses. Instead, however, of their being left unorganised, or ad hoc attempts being made by unco-ordinated groups, they must be made part of the Plan so as to be systematised and regularised bringing the fullest possible benefit to the community.

This education must be made interesting as well as usefull. All the modern devices of the Cinema, the Radio, and the Teleprinter must be pressed into service, so that teaching or training of this kind does not become a burden. Only then can those not directly engaged in a given factory or workshop would be attracted to the more liberal side of such programmes. And here comes in the service of the Local Bodies, or Societies specially started for this purpose of Mass Education and Cultural growth. The example of Russia is, in this as in many other departments of working to a preconcerted Plan, encouraging as well as instructive; and ought to be utilised to the utmost possible.

### (v) Training the Defective, and the Problem Child

Training of the defective child must occupy a distinct place of its own, as the normal child's education must not be impeded by the task of providing for the abnormal. The physically defective children are, relatively speaking, in a small proportion; and, as the Plan progresses with success, that proportion is bound to decline.

Arrangements, therefore, for the suitable education and training of these, so that they be not a nuisance to society or burden to themselves, must be made by the State, or its delegate, the Local Self-Governing Unit, with such assistance from the Unit or Union Government as may be available, in respect of funds, personnel or technique. Quite efficient and satisfactory systems have already been worked out to meet this need, which is felt in every community; and which is not impossible to provide for in this country.

The case of the so-called Problem Child, or those mentally defective, stands on a somewhat different footing. While compensation for physical shortcomings have been found in mechanical devices, the need of the mentally defective, the idiot or the imbecile, still remains in the vague domain of Psychiatry. Experiments, however, are even in this case numerous; and the results by no means disappointing. Our proportion of this type of child or adult is fairly high, due probably to our economic and social conditions that the Plan is intended to remedy.

Provision for the Defective and for the Problem Child must be part of the National Education System. The proportion of these categories of children is not very high. But, given the very large number of our population, the number to be provided for in these classes would also be considerable. They must, therefore, be grouped and brought together under some common system, when their education and training would be easier; and their becoming eventually useful members of society, not a burden to themselves, nor a nuisance to others,—would be simplified. The task cannot be left to private charity or unco-ordinated public effort.

### (vi) Ways and Means to Find Teachers

As soon as the policy of universal and compulsory Basic education for every child in the community is adopted, the need for an army of teachers will become urgent as well as intense. Even today the problem of finding sufficient and suitable teachers is no mean handicap and impediment in the way of any progressive system of mass education. With the general principle of Basic Education through the medium of a craft beginning to be translated into everyday life, the need for specially trained teachers in ever increasing numbers would become more intense than ever. Given compulsory and universal Basic Education for a minimum period of 7 years there would be something like 50 to 60 million children to provide for. And this mass will not be properly attended to in all subjects as well as in all stages of the Basic stage, with less than 2 million teachers at the very lowest.

Education through craft requires in each teacher, not only a full knowledge of the technique of the craft,—principal or subsidiary,—but also ability to convey through it other branches of knowledge as well. For this purpose all the required number of teachers would have to be specially trained for a full course necessary. One of the first needs, therefore, of the new programme would be the intensive and expeditious training of teachers in sufficient numbers and quality to make the programme itself a success. In the first years of the Plan, it is very likely that attention will have to be concentrated much more on training institutions in every district of the country than on the implementation of compulsory and universal Basic Education proper. The Plan must take stock of this factor and deal with it immediately.

The figure mentioned above concerns only the Basic Teacher. The requirements of Secondary and University Education, as well as for Higher Scientific Research, are not included; and the number needed on that account will also not be inconsiderable. Even counting that only 15 per cent of those going in for basic education compulsorily will have to be provided in the Secondary Stage and 15 per cent of the latter in the next higher stage, the number of teachers needed would not be less than quarter of a million at least; and they will have to be specially adequately trained. Then again, the condition of services for teachers to-day are most unattractive; and so, they will have to be revised radically so as to make the profession more attractive and acceptable so that, they make a life career for those duly qualified.

This means an elaborate and extensive system of training the Teacher before he can be qualified to be entrusted with his work. The State will have to begin the programme of universal mass education by an extensive system of intensive training for the would be teacher. And that the pedagogic career may prove attractive to the proper sort of young man and woman, the conditions of employment and prospects in the profession will have to be substantially improved.

This is not simply a problem in public finance, though the financial aspect may be the most striking. It is a problem in selecting the right person, giving him the right preparatory training and experience, and affording him all those facilities which are necessary to make him keep up his zeal, and not become fossilised in the work.

The problem of mere numbers needed is not inconsiderable either. Even in the very first years, the number of teachers needed will run into 6 if not 7 figures. And these will not be possible to provide, without some recourse to a system of Social Conscription. Once the inequalities in return from the different occupations available under the Plan are ironed out, the future recruitment will not present any grave difficulty. But in the initial years conditions would have to be very materially improved, if the Teacher is not to be a rolling stone, but a steady careerist who finds a vocation in his profession.

A similar, if not so great, difficulty will be found in regard to the provision of Text-Books, Instruments, and all kinds of Apparatus. If the principle of education through the mother tongue of the pupil is adopted,—as it must be,—in all stages, very considerable enterprise must be undertaken, on a systematic scale, to provide books for study, at least in the higher stages, where the medium of instruction today is English. Even if a common National language is adopted, e.g., Hindi, with Deva Nagari script for education in the higher stages, this problem will face the country in every unit of the Union. It must be an integral part of the Overall Plan to provide all the necessary books in the local or National language, within a given period fixed in advance.

India is backward today, also, in the production of all other aids to education, like mathematical instruments and scientific apparatus. We cannot be dependent for all time to come upon foreign sources of supply for these our primary needs. The necessary industries must, accordingly, be set up as part of the over-all National Plan to make and supply these instruments, apparatus and laboratory equipment within a predetermined period.

### (vii) University Education, Scientific Research and Advanced Technical Training.

In the case of Technical and University Education, the problem has a somewhat different aspect. In the new method of Education, generally accepted in the Basic stage, technical training of an elementary kind will go hand in hand with ordinary instruction in all departments of knowledge. This policy will continue in the successive stages of the national educational system.

Specialised or advanced training, including experimental or post-graduate research, however, in specific branches of Arts, Science or Technique, must be correlated with the available employment, as planned in the National Programme for each given year; and for each particular item or aspect of the Plan. The present day phenomenon of highly trained men—often with the best local or foreign degrees in extremely specialised branches of Science and Learning,—wasting their time for lack of suitable employment must be rendered impossible. The main principle of the new policy must be: Every properly trained person must have a billet assured for him in advance, suited to his aptitude and training. If, after employment, any such person is sent out for still further training or specialisation in other countries, there must be no risk of unemployment, wastage, and frustration for such a person on return after completing the assigned course of training. None, however, need be sent or allowed to go abroad, until all available local facilities have been tried and fully utilised.

At the present time hundreds of students are selected for training abroad, particularly in Technical or Science institutions abroad, who, when they return, are by no means assured employment suited to their talents, attainments, or needs. This is due to lack of a pre-concerted programme, under which there would be proper co-relation between the available personnel and the tasks needed to be carried out. Money now spent by way of Foreign Scholarships to students being sent abroad is practically wasted, simply because no definite programme has been prepared and tasks allotted in response to which such students are sent abroad. It would be both more economical and more useful to the country, if, instead of thousands of students being thus sent abroad without definite tasks awaiting them, an effort was made to increase the resources of our local educational institutions by importing trained experts or specialists, not only to give theoretical instruction in the various branches of Art, Science, or Technique; but also to give practical demonstration by actual work wherever possible in the laboratories, factories, workshops, hospitals, or other institutions that may be set up under the Plan.

The organisation of University education has its own problems. Universities have been regarded all through the ages as centres of learning, where the utilitarian motive is claimed to be absent, or at least in the background. They have been constituted, organised, and conducted as semi-autonomous bodies, made up of the teachers and pupils working there, which would not gain in fullness or utility, if State control or regimentation was applied.

Under existing conditions; it must be noted, Indian Universities are little more than examining machines working on a mass scale, to standard pattern, producing by the thousands graduates and post graduates, who are more often than not misfits in life through no fault of their own. The highest stage of education needs, therefore, radical reform. The Universities themselves need reorganisation and reorientation to guard against the danger of their becoming victims of Party machines or power politics.

Definite correlation must be established, in this as in other stages of education, between training and actual employment; and that will no doubt go a long way to make the Universities not only popular and autonomous; but also make technical training sufficiently close to the actual work and useful.

### Technical Education And Scientific Research

The provision of the highest degree of Technical education, and the organisation of Scientific Research, must necessarily be an integral part of the Educational sector in the national Plan. The obligation in that behalf must primarily be that of the State. At the earlier stage, as remarked already, this obligation may be placed on the Employers, i.e. factory management and workshop direction in every item of the Plan. But the basic obligation must be of the State, carried out as, an integral part of the Plan, by whatever agency the State deems appropriate for the purposes in the several stages.

At the highest stage, this obligation may be discharged by some semi-autonomous Statutory body like a Federal or Union University, or special institutions, such as those now existing at Bangalore, Ranchi, or Dehra Dun. But in every case a measure of State control and supervision must be ensured primarily to see that these bodies and institutions function in conformity with the main Plan, and the researches carried out are mutually co-ordinated so as to make a consistent programme.

The tradition of University organisation and function has made those bodies, ever since their establishment in modern form in this country, autonomous institutions, at least in theory if not in fact. The first Universities, established in the three Presidency Towns, were examining bodies, which tested and certified candidates appearing at their examinations from the affiliated colleges, as having acquired a certain degree of proficiency in given subjects. In course of time a change came over these organisations. From merely examining machines they progressively became directly teaching institutions, which, even when discharging their teaching functions through affiliated colleges exercise an increasing degree of control on the latter through prescription of courses and standards for examinations, and laying down conditions of affiliation, and periodical inspection to see that the efficiency in teaching is properly maintained in the affiliated colleges. More than this, they have undertaken of late an increasing measure of direct teaching through Post-graduate Departments of their own, and the establishment and maintenance of advanced Research Institutions, particularly in Applied Science and Technology, which have rendered useful service in building up industries and utilities in the country.

The Universities, however, though increased in number very considerably in the last generation, number hardly twenty throughout the whole of India. Such as they are, they have not quite shed the influence of their original beginnings. The bulk of University activities is still in relation to under-graduate studies, most if not all of which is conducted through affiliated colleges. They themselves retain post-graduate work and scientific research in their own hands. Their being converted into more and more democratic organisations causes considerable anomaly in working, and brings upon them demands, which, however great their resources, they are not always equal to meet. Their resources consist mainly of examination fees, with a supplement from Government grants and interest from endowments, which all put together do not suffice to meet the ever increasing demands on account of ever widening obligations.

The basic policy of democratic Government naturally inclines in favour of devoting greater funds to the lower stages of education where we have a heavy leeway to make up. The result is that the higher branches tend to be financially starved, while private profit seekers get a wide scope for their own ends. In widening democracy with responsible popular ministries, this tendency is bound to be accentuated. The need, therefore, of reorganising and reconditioning University Education, with special reference to Technological and Scientific Research as integral part of the Overall National Plan, becomes incontestible.

Our Universities and other institutions of that level will have to be more throughly integrated with the entire educational system of the country; and their working, coordinated with the National Plan as a whole, so as to make every phase and every branch of learning, of science, art and technique, directly responsive. They need not be converted into departments of State; but may function as Statutory Bodies with well defined powers and functions, and adequate resources to do justice to them. The attempt at democratising the Universities was needed in the days when an alien power ruled the land. But with the advent of real power in the governance of this country in the hands of our own popular Ministries the anomalies of democratic machinery in these institutions of learning and research become more and more glaring. It is, accordingly, desirable to revise the basic constitution also, so as to entrust autonomous powers to a body composed of those directly interested, with adequate control in the hands of Government to keep these organisations into step.

Further comment on this the highest stage in education is unnecessary in this introduction. The subject is dealt with in Part II of this volume dealing with Technical Training and Developmental Research, where the utilitarian as well as the cultural aspects are fully considered. The National Planning Committee having had no opportunity to consider that Report, the present writer cannot venture upon this ground and offer his own views on this subject.

### (viii) Provision of Employment

For the results of University and all other stages of education not to be wasted, it is necessary to organise and provide adequate and appropriate employment for every citizen in accordance with his or her taste, training and temperament. For this aim to be realised, a comprehensive plan of all round national development in every field of Primary and Secondary Production; of Utilities and Services; of Distribution and Consumption, is an inevitable condition precedent. It must be put into operation simultaneously on all fronts.

The problem of the so-called "Educated Unemployed" which used to stagger the preceding generation, arose, not only because the supply of such educated persons had outgrown the demand; but also because the demand was necessarily limited, while the supply was progressively increasing. There was, in fact, no attempt at co-ordinating, or adjusting the needs of the country with its resources in this respect.

Under the new aims and objectives of National Education, the problem would not be to find employment for the select few, tested at examinations and found suitable for the few jobs available in the public service. Under a nationally planned economy, **it would be a problem of utilising the entire energy of the whole mass of adult population of the country.** The State, representing the community, must undertake the obligation to provide employment for all adult citizens, men and women, and enable them to earn their livelihood. The available resources and requirements of the country should be so organised and adjusted as to leave no one without work, who is not precluded by physical disability or mental deficiency from working.

Education and training must accordingly be so designed and so provided that, for the total available man-power, variously trained and qualified, there must be automatically available suitable employment as part of the National Plan. None must be idle; none can be parasite. None must starve, nor beg for a living. All must be trained and drilled to fit each into an appropriate niche, gaining an honest and adequate living, and adding at the same time to the sum total of the national wealth.

In other words, the National Education System would be carefully integrated with a system of **Social Conscription** which will be part of the National Plan.

### (ix) Scope for Private Enterprise in the National Education

The community, through its organised agent, the Government, intervenes in an ever increasing degree, till at least the task of providing sufficient education for every child in the community, with or without parents, has become a national obligation as well as a public monopoly. This monopoly must be exercised as much in the ordinary normal schools, wherein children from 6 to 14 years of age, or whatever be the age prescribed for compulsory education, are to be regularly educated, as in the Infant Schools, and the Secondary or University stages.

At the present time a good part of this obligation, particularly in regard to Primary or Basic Education, is, however, discharged by the State,—supplemented by Private Enterprise working for profit. The State acts, for this purpose, through Local Self-governing Bodies. In the higher stages of education, the State becomes less and less directly concerned; and private enterprise of individuals or societies takes a very considerable share. At the University stage, semi-autonomous statutory corporations are established to deal with that sector of our National Education System.

The profit motive in Private Enterprise ought to be wholly eliminated from such a social service as the programme of National Education. So long, however, as the State is unable by itself to shoulder the full obligation of educating every member of the community upto the prescribed stage required under the Plan,—including Secondary, Technical, University Education and Research—a certain degree of Private Enterprise may be unavoidable. But even in that case it ought to be kept under rigorous control, if the main Plan is not to be frustrated or perverted.

Not all private enterprise in the educational field, it must be recognised, is inspired by greed for monetary gain for the founder or proprietor of an institution. And where such enterprise is inspired by Missionary zeal, or influenced by a desire for new experiments in educational technique or content, scope should be available for such endeavours, even though outside the main Plan. As these would be exceptional rather than normal; and as, **ex hypothesi**, there is no taint of profit-seeking for the promoters of such experiments, the State would lose nothing by suffering them to have room for self-expression. Only, if Missionary zeal expresses itself, under the guise of education, in any kind or degree of direct or indirect proselytising, it will have to be rigorously checked.

Because of limited resources; and also because of the more urgent claims of elementary education for the masses upon the Public Purse, scope for private effort may be left in the higher stages, where considerations of cost preclude the State from assuming directly the wholesale obligation, and prevent it from making such education free and compulsory to every child in the community. Here the education must be equal and uniform for all, free from any bias of class exclusiveness. And that can only be provided in public schools open to all.

In the Basic stage, however, no room should be left, on any ground whatsoever, to private enterprise. The entire programme of such education must be carried out, for the full period, exclusively through public agency, whether of the Unit Government, or of the existing Local Governing Bodies, or Special School Boards statutorily established for the purpose.

## X. FINANCE

'The toughest problem in re-organising the planned programme of mass education in this country is Finance. When Basic Education is accepted as a national obligation, and provided free and compulsory to every child of school-going age in the country, for a prescribed period of seven years; and when in consequence proportionate expansion takes place in the successive stages of higher education, the need for funds will increase in proportion.

The problem of Finance is, of course, universal; and affects every stage of education in every branch of science, learning, art and technique. The amount now spent from all sources in all the Provinces together is Rs. 31.62 crores. It averages hardly twelve annas per head of the population in British India. It is obvious that this is utterly inadequate if the indispensable minimum of educational expansion, as outlined above, and as mentioned in the reports following, is to be attained. New sources of revenue will have, therefore, to be discovered. Even if all possible economies are made, the saving made will not suffice to meet the much larger demand on this account upon the National purse. The system of Compulsory, Free, Universal Basic Education alone will cost not less than Rs. 300 crores per annum when it is in full blast; while even in the initial years the cost will not be less than hundred crores per annum for all States and Provinces put together. The exact percentage of the National Budget (as distinguished from the Governmental Budget) that ought to be devoted to Education is difficult to say; but 10 per cent of the total wealth of the country devoted to this item, which in reality is the most productive investment that can be found in the long run for any country anxious to build up a vigorous new economic life for itself, is by no means excessive. If the National Budget amounts to between Rs. 3 and Rs. 4 thousand crores to-day, at the present level of prices, this would mean setting apart something like Rs. 400 crores for the cost of education, a small fraction of which can be found from possible economies. Coupled with public health, which will be similarly dealth with in another volume in this Series, the total charge on account of these essential Social Services for the country will be somewhere near Rs. 1000 crores by the end of the first stage in planning. And that would be by no means extravagant.

Definite ways and means have been suggestd in a Note appended to the section of Priorities Report dealing with education, which may or may not be acceptable in all its details. But the principle would be incontestible that new sources will have to be found or methods developed, which will suffice to provide for this enormous need of the country. It is true that in the initial years of the Plan being put into effect not the whole of this gigantic sum would or could be spent for this purpose. That, however, is only a reason to show that we must build up our resources, progressively accelerating them so that the end expected may be realised without difficulty within the time limit set for the purpose.

There is not much room for economy, or retrenchment in the existing services. The lower ranks in the public service in all departments,—Provincial as well as Central—are so poorly paid, that even if any economies are possible and effected, they would not fill the gap. In the case of Education, the pay and prospects of the lowest ranks of teachers are notoriously inadequate and unattractive. Reference has already been made to the phenomenon of wastage and stagnation in our existing primary schools, wherein the real return on every rupee spent is scarcely three annas. If this wastage is to be remedied at all, the present teacher, inadequately paid and generally neglected, will not serve the turn. It would, therefore, be good economy, from the point of view of results, to revise radically the system of teachers' salaries and general prospects of that service.

At the time of writing the above, the report of the Pay Commission was not out. That Report has since been out, and is expected to add Rs. 30 crores at least to the Central Budget, mainly because of substantial increases in the basic pay of the lower ranks in Government service. Similar additions will have to be made by all Provincial and State Governments for their staff. There has been some prospect of reduction, following the Report of the Pay Commission, in the top salaries. But the saving thus made will be swallowed by the increases in the lower scales.

Highly productive new sources of revenue, therefore, must be discovered; and existing ones considerably expanded, if this hiatus is to be filled. An appendix to the Priority Report of the National Planning Committee Sub-Committee offers some suggestions for this purpose. Even if those suggestions are not adopted integrally, similar lines will have to be developed, since existing direct and indirect taxation seems to have reached saturation point, and further yield by manipulation of rates of these is unlikely. State enterprise of a productive and profitable character in an ever increasing extent seems to be the only way of finding the necessary funds—not only for mass education, but for all other items in the planned programme of national development, which is sketched in this Series. Such Enterprise in productive industry will not only add to the national wealth; it will also leave a greater balance in the hands of the individual which no system of taxation can achieve. All taxes are compulsory deductions from the wealth of the individual; **per contra,** all profits of Public Enterprise are **additions** to the wealth of the individual. This, however, is a theme which will be much more fully developed in another Sub-Committee's Report; and so we need say no more at this stage on this most crucial subject for planning as a whole.

K. T. SHAH.

# PART II

# Technical Education And Developmental Research

# PERSONNEL OF THE SUB-COMMITTEE

on

# TECHNICAL EDUCATION AND DEVELOPMENTAL RESEARCH

-0-

*Chairman*

Dr. M. N. Saha.

*Secretary*

Dr. H. L. Roy.

*Members*

Dr. A. H. Pandya,
Dr. Birbal Sahani,
Dr. J. C. Ghosh,
Dr. Nazir Ahmed,
Dr. S. S. Bhatnagar.
Dr. N. R. Dhar,
Dr. J. N. Mukherji.
Mr. D. C. Gupta,
Dr. Afzul Hussain,
Dr. Muzaffar,
Mr. B. S. Patel,
Mr. M. J. Antia,
Mr. A. K. Shaha.

# REPORT OF THE SUB-COMMITTEE ON TECHNICAL EDUCATION AND DEVELOPMENTAL RESEARCH

## Introduction.

Owing to the inability of the office bearers and some members of the Technical Education & Developmental Research Sub-Committee of the National Planning Committee as originally appointed, to meet and function properly, the said Sub-Committee was reconstituted with Dr. M. N. Saha as Chairman and Dr. H. L. Roy as Secretary in July 1940. The first meeting of the members of the sub-committee present in or near Calcutta was held on 8.7.40 in which the following gentlemen were present:—

Dr. M. N. Saha
Dr. S. S. Bhatnagar
Dr. J. N. Mukherjee
Dr. A. H. Pandya
Dr. H.L. Roy.

Conclusions reached at that meting were that

(i) informations available about the existing provisions for technical education were very meagre;

(ii) instead of calling meetings of the sub-committee, members of which are in residence in different parts of India and who are not likely to meet, a detailed questionnaire be framed by a smaller sub-committee composed of Dr. M. N. Saha, Dr. A. H. Pandya and Dr. H. L. Roy; and that questionnaire be circulated to all members of the sub-committee and to all persons and institutions who may be in a position to supply informations.

This smaller sub-committee met several times, framed a questionnaire and the printed questionnaire was sent to:—

(1) All members of the sub-committee,

(2) Directors of Public Instruction, Directors of Industries and the Universities of all the Indian Provinces and of the principal Indian States,

(3) Principals or Directors, as the case may be, of Engineering Colleges and Institutions and Research Institutes.

The questionnaire is attached herewith. (Appendix)

Most of the addressees did not send any reply; and those received were in most cases not complete. The cold reception and silence observed, in most cases, were probably due to the fact that the Congress-ministries had by that time resigned, and the activities of the National Planning Committee were not looked upon with favour by many persons and institutions.

In any case, replies to the questionnaire obtained will show that there has been no well-considered plan in the aims and management of many of the institutions. Requirements of the country as a whole have never been the guiding principle. Their origin was due to any one or more of the following causes: (1) supply of men for the governmental or semi-governmental departments, (2) a vague idea that industrial development of the country will be promoted if there be more technical minded people, (3) solution of the unemployment problem of the middle class youngmen, (4) satisfaction of local vanity in having a technical institution, etc. Industrial development of the country has never been the clear aim in the establishment of these institutions. They were all founded by isolated efforts of individual persons or groups or the governments.

A good historical account of the development of higher technical institutions in India may be obtained in the presidential address of Dr. A. H. Pandya, President of the Engineering & Metallurgical section of the Indian Science Congress for the year 1942.

A new, perhaps temporary, impetus to technical education in the country has been given by opening of classes by the Central Government for the training of technical hands for war purposes.

The following is a list of principal references utilised in preparing the report:—

1. The Wardha Scheme of Education by Varkey.

2. Educational Reconstruction—published by Hindustan Talimi Sangh—Detailed syllabus of Basic Education scheme by Zakir Hussain Committee.
3. Report of the Indian Industrial Commission—T. H. Holland Committee.
4. Report on Vocational Education in India—Abbott & Wood.
5. The Social Function of Science—Bernal.
6. Present Status & Trends of Engineering Education in the U. S. A.,—D. C. Jackson.
7. Memorandum on Technical Education in Bengal —John Sargent.
8. Education in Soviet Russia—Beatrice King.

The first part of this report contains a summary of the Development Research Institutions & Engineering, Technical & Vocational Institutions existing in India at present. This summary, as said before, is not complete because replies to questionnaire were not obtained from all.

The second part of the report contains an outline for the future reconstruction of technical education in the country at different stages. Philosophical and theoretical discussions have been purposely omitted from the report and detailed syllabus as well, all of which may come out in a fuller discussion of the matter. At the end of the second part of the Report are given diagrammatic sketches of the educational system of different countries.

## Part I

# DEVELOPMENTAL RESEARCH LABORATORIES & INSTITUTES IN INDIA

(Figures are taken from reports for the year 1939-40 in most cases)

Indian Lac Research Institute—Namkum, Ranchi, Bihar—Founded in 1924. In 1931, Government of India took over the control. Governing Body consists of Government nominees and trade representatives. Sources of income—collection of lac cess. Total expenditure for the year 1939-40 was about Rs. 2,14,000|-. Devoted to research on the production of lac and its uses.

Technological & Research Laboratories, Indian Central Jute Committee, Calcutta.—Opened in 1939. The work of the Laboratories is part of a scheme concerned with research and investigations on the economics, marketing, agriculture and technology of jute. Annual budget—about Rs. 1,00,000|-. The Indian Central Jute Committee receives a grant-in-aid from the Government of India. Further capital expenditure of Rs. 3,66,000|- and further annual expenditure of Rs. 44,000|- have been asked for.

Irrigation Research Institute, Lahore, The Punjab.—Founded in 1927 by the Punjab Govt. Annual budget—about Rs. 4,00,000. Concerned with study and research of irrigation and river problems of the Punjab. Annual reports published show the nature of the work done. The Institute consists of the following sections:—Chemical, Physical, Mathematical, Statistical, Hydraulic, Land Reclamation and General.

Harcourt Butler Technological Institute, Cawnpore—Received no reply to the questionnaire (from it).

Imperial Institute of Sugar Technology—Cawnpore—Founded in 1936 by Government of India. Institute undertakes research on Sugar Technology in general and of those of Indian factories in particular, utilization of the by-products of the industry, detailed testing of new varieties of cane under factory conditions, and general problems of Sugar Engineering & Chemistry. Renders technical assistance to factories: Imparts technical education to students; Prepares standardisation of sugar, and statistical reports. Five regular courses of training for students:—Fellowship courses in Sugar Technology & Engineering (Three sessions, 4 and 3 students admitted every year respectively), Associateship course in Sugar Technology & Engineering (Three years' course, 12 students admitted every year in each course), Sugar Boilers' Certificates Course (One year's Course, 12 students admitted every year). Annual budget and capital investment not supplied.

Imperial Institute of Veterinary Research, Izzatnagar —Received no reply to the questionnaire (from it).

Institute of Veterinary Research, Mukteswar—Received no reply to the questionnaire.

Agricultural Research Station, Shahjahanpur—Under the Department of Agriculture, U. P. Government: Researches carried on (in) Sugar Cane and Paddy.

No reply.

Fruit Research Station, Chaubatia, Almora—Received no reply to the questionnaire.

Imperial Dairy Department, Bangalore—Imperial Dairy Institute, a part of the Department, provides instruction for many categories of students for varying periods of time. Of these the most important are the post-graduate and the Indian dairy diploma classes (2 years' course). The research activities of the Institute embrace work on the breeding, feeding, and management of dairy stock of all ages, the handling of milk and the manufacture of both western and indigenous milk products. Annual budget for the Department is Rs. 2,08,000|-.

Indian Institute of Science, Bangalore—Founded in 1907 by late Mr. J. N. Tata. Financial help is received from the Tata Endowments, Governments of India, Mysore, Hyderabad, Madras, Bombay and C.P.; Departments of Physics, Pure and Applied Chemistry, Bio-chemistry, and Electrical Technology; Number of Research Workers (194) Annual budget Rs. 5,54,000|- Capital investment about Rs. 40,00,000|-.

Technological Laboratory, Indian Central Cotton Committee, Matunga, Bombay—Founded in 1923 by the Indian Central Cotton Committee; Semi-Government i.e. Government and commercial bodies. Annual budget Rs. 1,56,000|-; Capital invested Rs. 6,50,000|-. Funds are found from the Cotton Cess Act of 1923.

Imperial Agricultural Institute, New Delhi—The Institute was started at Pusa in 1905 and removed to its present site at New Delhi in 1937 after the Bihar earth-quake. For the year 1937-38, the following schemes were in operation:—(1) Testing of crop variety too late in maturity, (2) Potato breeding scheme for Northern India, (3) Breeding rust-resisting wheat, (4) Research on cigarette tobacco, (5) Testing under Northern Indian conditions the seedling canes bred at Coimbatore, (6) Cytogenetic study of sugar cane, (7) Research on mosaic and other diseases of sugar cane, (8) Research into insect pests of sugar-cane, and (9) Research into chemistry of sugar-cane. Training in the post-graduate work is imparted to students sent by different provinces; total number of such students in 1937-38 was 36. Annual budget Rs. 10,00,000|-.

Central Irrigation & Hydrodynamic Research Station, Poona—Founded in 1916, and the station at Khadakvasla (Poona) was started in 1925. Managed and maintained by Government of India, in the Department of Labour since 1937-38. Concerned with the practical application of engineering knowldge and research to the solving of problems connected with irrigation and river-control. Annual budget—Rs. 1,32,000|-. 12 persons are engaged in research and routine work. Work entrusted with the station is published in the form of printed notes and reports. During the period 1916-1938, 56 notes and reports have been published.

Forest Research Institute and College, Dehra Dun—Founded in 1920. Capital investment exceeds a crore of rupees and annual budget is in the neighbourhood of Rs. 7½ lakhs. Forest Ranger College was started in 1881 by the Government of India in the Department of Education, Health, and Lands. 24 months' course. Total number of students—35. Annual budget for the college Rs. 50,000|-. Tuition fees per student per year Rs. 1,500|-.

Nutrition Research Laboratories, Coonoor, S. India. Founded in 1918; Maintained by the Indian Research Fund Association, New Delhi. Annual budget for salaries only Rs. 50,000|-, approximately.

Cattle-feeding Research Station, Government Cattle Farm, Bharari, Jhansi. Under the U. P. Government. Received no detailed reply to the questionnaire.

(Figures are taken from reports for the year 1939-40 in most cases).

## Technical Institutions in India—Province by Province

## United Provinces.

There are 23 Government Technical & Industrial Institutions under the control of the Department of Industries & Commerce besides 52 institutions receiving recurring grant-in-aid from the Department. The list of these institutions is attached herewith. Replies to the questionnaire were obtained from some of the institutions; abstracts from these replies are also given.

### List of Government Technical and Industrial Institutions in the United Provinces.

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 1. | Harcourt Butler Technological Institute, Cawnpore. | Trains students as:<br>(1) Research Chemists in general applied chemistry.<br>(2) Technical Chemists in oil extraction and refinery. |
| 2. | Central Textile Institute, Cawnpore. | (1) Dyeing & Printing.<br>(2) Weaving & Machinery. |
| 3. | School of Arts and Crafts, Lucknow. | (1) Fine Arts and<br>(2) Industrial arts. |
| 4. | Wood Working Institute, Bareilly. | (1) Cabinet making and joinery.<br>(2) Joinery (artizan course)<br>(3) Joinery (advanced course)<br>(4) Machine Tool Course.<br>(5) Painting, polishing, and wood finishing course.<br>(6) Upholstery course. |
| 5. | Carpentry School, Allahabad. | (1) Artizan class.<br>(2) General Wood Working class.<br>(3) Advanced wood working class.<br>(4) Teachers' training class.<br>(5) Polishing & painting class. |

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 6. | Carpentry School, Naini Tal. | General Wood Working. |
| 7. | Carpentry School, Fyzabad. | ditto. |
| 8. | Carpentry School, Dehra Dun. | Smithy, polishing & carpentry. |
| 9. | Technical Institute, Lucknow. | Technical subjects: Mechanical engineering, electrical engineering, practical mathematics, applied mechanics, drawing, carpentry, pattern making, foundry, forge, mathematics, English, steam engine, electricity, machine construction, mechanical drawing, machine shop, oil engine, fuel test, heat engine, calculation. |
| 10. | Technical Institute, Gorakhpur. | do. |
| 11. | Technical Institute, Jhansi. | Heat Engine, applied mechanics, algebra, trigonometry, arithmetic and mensuration, electricity, mechanical drawing, and machine construction. |
| 12. | Leather Working School, Cawnpore. | Anatomy of the foot and measurement. Structure and divisions of the skins, choice and purchase of materials. Costing and general knowledge. Boot and shoe making, suit case etc. making. |
| 13. | Leather Working School, Meerut. | do. |
| 14. | Metal Working School, Aligarh. | Metalware making, casting etc. |

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 15. | Batuk Prasad Khattri Industrial Institute, Benares. | Brassware making. |
| 16. | Technical School, Fatehpur. | Leather tanning. |
| 17. | Central Weaving Institute, Benares. | Weaving. |
| 18. | Model Weaving School, Najibabad, Dist. Bijnor. | Weaving. |
| 19. | Model Weaving School, Almora. | do. |
| 20. | Model Weaving School, Mau, Dist. Azamgarh. | do. |
| 21. | Model Weaving School, Muzaffarnagar. | do. |
| 22. | Model Weaving School Khairabad, Dist. Sitapur. | do. |
| 23. | Weaving and Cloth Printing School, Bulandshahr. | Weaving & Printing. |

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## List of Aided Technical and Industrial Institutions in the United Provinces.

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 1. | A. P. Mission Industrial School, Saharanpur. | Carpentry, blacksmithy, tailoring, motor mechanics. |
| 2. | Lalkurti Hosiery School, Meerut. | Hosiery & chikan works. |
| 3. | Vaish Orphanage, Meerut. | Carpentry and tailoring. |
| 4. | Muslim Orphanage, Meerut. | Carpentry and tailoring. |
| 5. | Hindu Depressed Classes Industrial School, Khurja (Bulandshahr). | Carpentry, smithy, weaving and tailoring. |
| 6. | Muslim University City Weaving School, Aligarh. | Weaving. |
| 7. | Municipal Board City Weaving School, Muttra. | do. |
| 8. | St. Joseph's Orphanage Industrial School, Agra. | Sewing, knitting and needle work and flower-making. |
| 9. | C.M.S. Industrial Mission Boy's Industrial School, Sikandra (Agra) | Smithy, carpentry, tailoring and printing. |
| 10. | Technical College, Dayalbagh, Agra. | Mechanical, electrical and automobile engineering, and leather working. |
| 11. | Kunwar Lal Singh Man Singh Industrial School, Mainpuri. | Carpentry, tarkashi; tailoring and weaving. |

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 12. | Municipal Board Tailoring and Cutting School, Bareilly. | Tailoring. |
| 13. | Arya Samaj Orphanage Industrial School, Bareilly. | Carpentry, tailoring & weaving. |
| 14. | Anjuman Islamia Orphanage, Bareilly. | Carpentry & tailoring. |
| 15. | Municipal Board Industrial School, Moradabad. | Brassware manufacture. |
| 16. | District Board Durrie Weaving & Carpet Classes, Puwayan (Shahjahanpur). | Carpet Weaving. |
| 17. | District Board Industrial School, Farrukhabad. | Weaving, tailoring, dyeing and printing. |
| 18. | Choube Gur Narain Trust Industrial School, Manikpur, Etawah. | Weaving, and wire-fitting. |
| 19. | Muslim Orphanage, Cawnpore. | Carpentry, leather & tailoring. |
| 20. | Hindu Orphanage, Cawnpore. | Carpentry & tailoring. |
| 21. | Municipal Board Leather Working School, Allahabad. | Leather Working. |
| 22. | District Board Weaving School, Orai (Jalaun). | Weaving. |
| 23. | District Board Weaving School, Kalpi (Jalaun) | Weaving. |
| 24. | District Board Weaving School, Village Ingotha (tahsil Hamirpur) Halirpur. | do. |

| No. | Name of the institution and of the place where it is located. | Subject taught. |
|---|---|---|
| 25. | Home for women in Distress, Benares (Kashi Anathalaya). | Spinning, knitting, tailoring, weaving and gota-making. |
| 26. | Wesleyan Mission Industrial School, Benares. | Wood-working, tailoring, gardening, smithy and polishing. |
| 27. | Ceramic class attached to the Hindu University, Benares | Ceramics. |
| 28. | District Board Weaving School, Gorakhpur. | Weaving |
| 29. | District Board Carpentry School, Almorah. | Carpentry. |
| 30. | District Board Carpentry School, Srinagar, Garhwal. | do. |
| 31. | District Board Weaving School, Chhinka Gamsali (Garhwal). | Weaving. |
| 32. | Prem Vidyalaya, Tarikhat, Ranikhet. | Spinning, weaving, carpentry, agriculture and gardening. |
| 33. | Noor-ul-Uloom Leather Working School, Bahraich. | Leather working. |
| 34. | District Board Industrial School, Hardoi. | Tailoring and weaving. |
| 35. | Weaving School, Duggada, Garhwal. | Spinning, weaving, including carpet making and dyeing. |

1. Benares Hindu University—Founded in 1919. The University offers courses in Applied Chemistry, Geology (1920), Glass Technology, Ceramics, Agriculture and Pharmacy. The Engineering College of the University offers courses in (1) Electrical and Mechanical Engineering (combined) with a total of 391 students on the roll (2) Mining & Metallurgy. Four years' course; Admission after Intermediate in Science. Sources of income: Endowments from Indian Princes and others, annual grant of Rs. 3 lakhs from Government of India, and tuition fees from students varying from Rs. 180|- to Rs. 200|- per year. Geology Department has 135 students (B.Sc. & M. Sc.) on the roll.

2. Thomson College of Civil Engineering, Roorkee—Founded in 1847; offers courses in (1) Diploma in Civil Engineering, admission after Intermediate Examination, 3 years' course; total number of students: 96; (2) Overseership course (1922), admission after High School, 2 years' course, total number of students: 91; (3) Draftsmanship course (1896), admission after Anglo-vernacular examination, class VIII, 3 years course, total number of students 27.

   Managed by the Education Department of U. P. Government; total annual expenditure is about Rs. 2,00,000|-.

3. Hewett Engineering School, Lucknow—Founded in 1904 by the late S. Md. Yusufalli. Managed by a private body composed of three governors—Messrs. Asghar, S. A. Haidar, and S. W. Haidar. Annual expenditure Rs. 41,000|-. Offers Overseership course as recognised by the U. P. Government. Total number of students: 203.

4. Civil Engineering School, Lucknow—Founded in 1922 by the Hindu Education Society, Lucknow, and managed by that Society. Offers Sub-Engineer's, Overseer's, and Sub-Overseer's courses. Total number of students on the roll—120. Annual expenditure about Rs. 19,000|-.

5. Government Technical Institute, Lucknow—Founded in 1892 by the U.P. Government, Managed by

the Industries Department of the U. P. Government. Offers Diploma and Certificate courses in (i) Mechanical and Electrical Eingineering—3 years' course after the High School Examination with science; (ii) Light Machine Mech. class—3 years' course after the High School Examination (iii) Oil Engines and Drivers' class—Literate students—5 months' course; (iv) Painting class—must be literate in one of the vernaculars—3 years' course; (v) Special Artizans' class—no time limit. Total number of students in the Institute is 188. Annual expenditure is about Rs. 54,000|-.

6. Government Techniacal Institute, Gorakhpur—Founded in 1910; under the management of U. P. Government in the Industries and Commerce Department; offers Diploma and Certificate courses in Artizanship (Day and evening classes), Mechanical and Electrical Engineering etc. Total number of students in the roll is about 275; total annual expenditure is Rs. 45,000|-; Capital investment is Rs. 50,000|-.

7. Government Technical Institute, Jhansi—Founded in 1919 by the U. P. Government. Offers Railway Mechanical and Electrical Apprentices' Course (5 years); G.I.P. Rly. pays the wages of the students, students get practical training in G.I.P. Rly. workshops at Parel (Bombay) and Jhansi and attend this Institute for three months every year for the first four years of apprenticeship. Admission requirement—High School or Junior Cambridge Examination with mathematics and selection is made by an Entrance Examination. Total Number of students—95. Annual expenditure is about Rs. 20,000|-; total capital expenditure up to date is Rs. 87,000|-.

7a. Government Batuk Prasad Khattri Industrial Institute, Benares. Founded in 1920 by the Government and Late Rai Bahadur Batuk Prasad Khattri; under the management of U. P. Government; offers Artizans' course of 3 years' duration; total number of students on the roll is 55; total annual expenditure is Rs. 13,000|-.

8. Government Central Wood-working Institute, Bareilly—Founded in 1911; under the management of the U. P. Government in the Industries Department. It offers courses in Cabinet making and joinery, machine tools, painting, polishing and wood finishing, upholstery, kiln-seasoning etc. No tuition fees are charged from U. P. students; there is a manufacturing section attached to the Institute; total number of students on the roll is about 250; duration of the courses varies from 1 to 3 years; total annual expenditure is about Rs. 64,000|-; total investment in land, building and equipment is about Rs. 14,00,000|-.

9. Government Carpentry School, Fyzabad—Founded in 1936, under the management of the U. P. Government in the Industries and Commerce Department; total number of students on the roll is 27; annual expenditure is Rs. 9,300|- approximately.

10. Government Carpentry School, Dehra Dun—founded in 1927 by the U. P. Government; 3 years' certificate course in carpentry; admission requirement—study up to class VI; total number of students on the roll—33. Total annual expenditure—Rs. 7,000|-.

11. Government Carpentry School, Nainital—Founded in 1925 by the U P. Government; 3 years' Certicate course in carpentry; admission requirement —Upper Primary Standard; total number of students 34; annual expenditure Rs. 8,000|-.

12. Government Leather Working School, Meerut—Founded in 1920 by the U. P. Government. Two years' course; admission requirement: bare literacy; total number of students is 58; annual expenditure is about Rs. 13,000 capital investment is Rs. 24,000|-.

13. Government Tanning School, Fatehpur—Founded in 1927 by the U. P. Government; 15 students are admitted every year; most probably it is a one year's course. Annual expenditure is Rs. 7,500|-.

14. Government Leather Working School, Cawnpore—Founded in 1915 by the U. P. Government; no tuition fees for U. P. students; two years' course, admission qualification—literacy, L. P. Standard; total number of students is 87; total annual expenditure is Rs. 22,000; total capital investment up to date is Rs. 25,000|-.

15. Government Model Weaving School, Khairabad (Sitapur)—Founded in 1928 by the U. P. Government; one year's course. Total number of students is 10; annual expenditure is Rs. 5,000|-.

16. Government Weaving and Cloth Printing School, Bulandshahr—founded in 1926 by the Government. One year's weaving course, and two years' Dyeing and Printing course; admission requirement is literacy; total number of students is 27; total annual expenditure is Rs. 13,000|-.

17. Government Model Weaving School, Mau—founded in 1925, by the U. P. Government; total number of students is 42; annual expenditure is Rs. 6,000-|.

18. Government Model Weaving School, Najibabad—founded in 1925 by the U. P. Government. Total number of students is 17; annual expenditure is Rs. 7,200|-.

19. Government Central Textile Institute, Cawnpore—Dyeing and Printing School started in 1914 and Textile School in 1923, amalgamation of the two in 1937. Under the management of the U. P. Government. Offers courses in Textile Technology (carding, spinning and weaving), Chemical Technology (Dyeing, Bleaching and Printing), Artizans' course in Dyeing, part-time course for Textile Mill Apprentices and Artizans. Total number of students on the roll—about 75; annual expenditure—Rs. 80,000|-; total capital expenditure up to date Rs. 5,20,000|- approximately.

## BIHAR.

Indian School of Mines, Dhanbad—Founded in 1926 by the Government of India in the Department of Labour. Admission requirement—Intermediate examination; four years' associateship course and three years' certificate course; total number of students on the roll—104; total annual expenditure—about Rs. 2,00,000|-.

Bihar College of Engineering—Founded in 1896 by the Government; four years degree course in Civil Engineering started in 1924, total number of students in this course—107; three years' Overseership course started in 1900 for matriculates, total number of students in this course—101; two years' Sub-overseership course for matriculates started in 1896, number of students not mentioned; five years' Industrial Diploma course for M. V. standard students started in 1930, total number of students in this course—96, subjects taught are Electrical and Mechanical Engineering. Total annual expenditure is Rs. 1,50,000|- aprox., total capital investment up to date is about Rs. 8,00,000|-.

Jamshedpur Technical Institute—Founded in 1921 by Messrs. Tata Iron & Steel Co. Ltd. for the training of apprentices of various grades of the Company; total number of apprentices under training is about 325; annual expenditure is Rs. 1,70,000|-. Capital expenditure up to date is Rs. 4,00,000|-.

Cane Basket School for Doms, Chanpatia, Champaran—Founded in 1939 by the Catholic Mission; annual expenditure is about Rs. 2,000|-, other details not given.

Half-time Weaving School, Biharsharif—Founded in 1926 by the Industries Department of the Bihar Government; admission qualification—L. P. Standard; total number of students—71; annual expenditure is Rs. 4,000|-.

Ranchi Technical School—Founded in 1866 by G. E. L. Mission, Ranchi; Five years' course for apprentices in Metal work, Mechanical and Electrical Engineering, Leather Work etc. Admission qualification M.E., or M. V. standard; total number of students—155; total annual expenditure—Rs. 45,000|-.

Tirhut Technical Institute—Founded in 1925 by the Government of Bihar in the Industries Department; admission qualification—M. E. or M. V. Standard, Mechanical and Electrical Foreman or Chargeman's Certificate Course & Journeyman's Course—five years; total number of students on the roll is 118; total annual expenditure is Rs. 40,000|-.

Hazaribagh Reformatory School—Founded in 1882 by the Government; an industrial section was started in 1939.

Dehri Technical School—Founded in 1923 by the Government. Five Years' Charge-hand and Journeyman's course in Mechanical and Electrical Engineering. Admission qualification — Middle English Examination; total number of students —31; annual expenditure Rs. 8,000|-.

Industrial Chemistry Class—Founded in 1940 by Bihar Government in the Department of Industries; Location is not stated. Training imparted in the manufacture of soaps, cosmetics, disinfectants, boot-polish etc. one year's course for non-matriculates; number of students—12; annual expenditure—Rs. 18,000|-.

Cottage Industries Institute, Gulzarbagh, Patna—Founded in 1922 by the Government of Bihar and Orissa; training in cotton weaving, dyeing, and calico-printing, and tailoring (each of two years' course), glazed earthenware and pottery manufacture, cane furniture and basket manufacture; knitting, carpet weaving, durrie weaving, newar and tape weaving, lacquered toy-making, wooden toy-making, card-board toy-making (each of one year's course), paper making (6 months' course). Total number of students—194; about 75 per cent of the students are stipend-holders; annual expenditure is Rs. 68,000|-; sale of articles manufactured in the Institute fetches about Rs. 23,000|- per year.

Government Silk Institute, Nathnagar, Bhagalpur—Founded in 1922 by the Bihar Government. Offers three years' course in silk raising, spinning, warping, weaving, dyeing etc. admission qualification Upper Primary standard. Total number of students—20. About 18 of whom are Government stipend-holders. Annual expenditure—Rs. 21,000|-; capital investment up to date is about Rs. 20,000|-.

Bihar Government Printing Technical School, Gulzarbagh, Patna—Founded in 1920 by the Government of Bihar. Offers two years' course (admission qualification M. E. Standard), each in composing, letter-press printing, and in book-binding. Stipends are awarded. Total number of students on the roll-35. Annual expenditure—Rs. 5,200|-.

Lady Hallett Rural Welfare Institution for Girls—Founded in 1928 by the Ursuline Nuns. Training imparted in weaving, sewing and agriculture. Financial help from the Government Education and Industries Departments. Total number of students—25. Annual Expenditure Rs. 3,000|-.

Sir Maurice Hallett Rural Welfare Institution for Boys—Founded in 1939 by the Catholic Mission. Training Course in Textile and Agriculture for two years; total number of students—32. Annual expenditure Rs. 3,200|-; capital investment Rs. 13,000|-.

Vishwa Karma Industrial Institute—Founded in 1939 by Babu Ram Bahadur, managed by the Vishwa Karma Brahmin Community. Students prepare for the Matriculation Examination for five years after the M. E. examination and get part-time training in smithy, carpentry, electric fitting, casting, moulding etc. number of students at present (1939) is 31 but is likely to increase. No tuition fees charged.

Khunti Co-operative Home Industries Association Ltd.—Founded in 1922 by K. G. Tewari and M. B. Bhaduri. Training in weaving; admission qualification—U .P. Standard. Number of students, 8; mainly meant for the native aboriginal weavers of the Ranchi District.

Katkahi Technical School, Ranchi District—Founded in 1922 by Rev. F. Bodson S. J. under the management of R. C. Mission. One year's Weaving course and 3 years' Carpentry course after U. P. and M. V. standards respectively. Total number of students—43. Annual expenditure Rs. 2,000|-

Theosophical Harijan Industrial School Patna—Started in 1939; admission qualification—M. V. or M. E. standard; courses in weaving (2 years), carpentry (2 years), leather work (1 year); papermaking (6 months), tailoring (2 years), total number of students-44. Annual expenditure—Rs. 4,000|-.

Jamshedpur Technical Night School—Founded in 1918 by the Tata Iron & Steel Co. Ltd. Partly financed by the Industries Department of the Bihar Government; students are mostly employees of the TISCO & industries in or around Jamshedpur, and training is in connection with the work they are engaged in. Admission qualification—M. E. Standard. Teachers are full-time employees of the Company. Total number of students about 300. Annual expenditure is about Rs. 9,000|-. About 15 different subjects are taught. Tuition fee is eight annas per month which is refunded if the students pass the examination satisfactorily.

Mahilla Shilpa Kala Bhawan, Muzaffarpur—Founded in 1937 by Mr. Munishwar Prasad; imparts general education as well as arts and crafts, e.g. tailoring knitting, embroidery, spinning, music, domestic sciences; total number of students about 300; annual expenditure about Rs. 4,000|-.

Half-time Industrial School, Dighra, Darbhanga—Founded in 1939 by the District Board of Darbhanga; offers courses in weaving (4 years), tailoring (4 years), carpentry (4 years), surveying (4 years); total number of students-132. Admission qualification L. P. Standard; annual expenditure about Rs. 3,200|-.

## BOMBAY.

There is a large number of Technical & Industrial Institutions in the Province of Bombay, a list of which is attached herewith but details about these Institutions have not been obtained.

Similarly perhaps many important institutions may be omitted in this Report because replies to the questionnaire were not obtained from them.

### Recognised Technical & Industrial Institutions in the Province of Bombay during 1939—40.

**(a) Schools run by Local Bodies receiving Grant-in-aid from the Dept. of Industries, Bombay.**

1. F. S. Parekh Technical Institute, Surat.
2. V. J. Municipal Technical Institute, Poona.
3. D. L. Board Industrial School, Satara.
4. Robertson School of Industry, Pandharpur.
5. King Edward VII Technical School, Dhulia.
6. School of Industry, Ratnagiri.
7. Municipal Technical School, Sholapur.

**(b) Schools managed by Private Bodies receiving Grant-in-aid from the Department of Industries, Bombay.**

8. Salvation Army Weaving School, Kaira Camp.
9. I. P. Mission Industrial School, Borsad.
10. Vocational Training School, Ankleshwar.
11. Mahajan Home Industrial School, Surat.
12. A. R. Sonawala Industrial School, Bordi.
13. Am. Wes. Mission Industrial School, Sanjan.
14. Textile Technical School, Parel, Bombay.
15. S. A. Willingdon Boys' Industrial Home, Bombay.

16. Bhagini Samaj, Bombay.
17. Dadar School for the Blind, Bombay.
18. N. S. D. Industrial Home for the Blind, Bombay.
19. S. P. G. Mission Industrial School, Ahmednagar.
20. S. A. Boys' Industrial School, Ahmednagar.
21. Industrial classes attached to Modern High School, Ahmednagar.
22. St. Barnabas Industrial School, Manmad.
23. Mission Industrial School, Poona.
24. Technical Institute attached to Fergusson College, Poona.
25. School of Radio Physics and Electronics, Poona.
26. Sir D. M. Petit Industrial School, Sirur.
27. K. E. S. Topiwala Industrial School, Alibag.
28. K. E. S. Vithoba Khandoba High School, Typography Class, Panval.
29. Maharashtra Mudran Shala, Poona.
30. Primary Handicrafts Class, Bombay.

**(c) Schools run by Local Bodies not receiving grant-in-aid but recognised by the Dept. of Industries, Bombay.**

31. Thana School Board's Carpentry Class, Dahanu.
32. Thana School Board's Carpentry Class, Mokhada.
33. Thana School Board's Carpentry Class, Shahpur.

**(d) Schools managed by Private Bodies not receiving Grant-in-aid but recognised by the Department of Industries, Bombay.**

34. Chimanlal Nagindas Industrial School, Ahmedabad.
35. Jyoti Sangh, Ahmedabad.
36. Ideal Tailor & Cutter Institute, Ahmedabad.
37. Radio Electric Institute, Bombay.
38. Narsi Technical and Industrial Institute, Surat.
39. N. G. Rao's English Tailoring College, Bombay.
40. E. M. F. Radio Institute, Bombay.
41. J. N. Petit Parsi Orphanage, Lal Baug, Bombay.

42. Institute Indo-Portuguese, Bombay.
43. Khalsa College Bombay Technical Institute, Bombay.
44. Chicago Radio Institute, Bombay.
45. Primary Handicrafts Classes, Bombay.
46. Zarapkar Tailoring and Cutting Institute, Bombay.
47. Mahomed Hajee Saboo Siddik Institution, Bombay.
48. Mahila Kala Mandir, Bombay.
49. Institute of Radio Technology, Bombay.
50. National Industrial School, Bombay.
51. Bai Avabai Framji Petit Parsi Girls' Orphanage, Bandra.
52. R. G. Tambankar's Wireman's Class, Ahmednagar.
53. Jadhab College of Tailoring and Cutting, Poona.
54. Victoria Tailoring & Cutting College, Poona.
55. Zarapkar Tailoring and Cutting Institute, Poona.
56. Pandharpur Electric Supply Co's Wiremen's Class, Pandharpur.
57. Poona School and Home for the Blind, Poona.
58. National Tailoring and Cutting Institute, Hubli.
59. Industrial classes attached to Marine High School, Novha.

### (e) Government Reformatory and Settlement Schools,

60. David Sassoon Industrial School, Bombay.
61. Yervada Industrial School, Yervada, Poona.
62. Industrial Settlement School, Sholapur.
63. Industrial Settlement School, Bijapur.
64. Industrial Settlement School, Hubli.

### (f) Government Technical Industrial Schools controlled by the Department of Industries.

65. R. C. Technical Institute, Ahmedabad.
66. Government Tanning Institute, Khar, Bombay.
67. Government Leather Working School, Khar, Bombay.

68. Government Hand Weaving Institute, Poona.

**(g) Industrial Institutions and classes recognised for examinations only.**

69. B. N. Gamadia Parsi Hunnar Shala, Bombay.
70. Municipal Byculla Marathi Central School, Byculla, Bombay.
71. Municipal Ghodapdeo Marathi Central School, Bombay.
72. Municipal Khetwadi Marathi Central School, Bombay.
73. Municipal Foras Road Marathi Central School, Bombay.
74. Municipal Lamington Road Gujrati Central School, Bombay.
75. Municipal Marathi Parel Central School, Bombay.
76. Municipal Lady Jamshedji Road Central School, Bombay.
77. Municipal R. C. Mahim Urdu Central School, Bombay.
78. Municipal Imamwada Central School, Bombay.

College of Agriculture, Poona—founded in 1878 by Bombay Govt. Admission qualification—First Year in Sc. Three years' course for the degree, Bachelor of Science in Agriculture of the University. Total number of students on the roll 200. Annual expenditure Rs. 3,15,000|- of which are recovered Rs. 43,000|- from tuition fees, Rs. 71,500|- from sale of products and Rs. 5,500|- from other sources. Capital investment up to date is a few lacs of rupees.

School of Radio-Physics & Electronics, S. P. College, Poona,—Founded in 1936 by The Shikshana Prasarak Mandali. Offers courses for matriculates in Radio Operators' License (one year), Radio Servicing (one year), and for B.Sc.'s and B.E.'s two years' course in Radio Engineering. Total number of students 54, in the First year classes in 1940.

| | |
|---|---|
| Annual expenditure—about | Rs. 10,000\|- |
| Capital investment | Rs. 23,000\|- |

Department of Chemical Technology, University of Bombay, founded in 1934 by the University. Admission qualification—at least second class honours in B.Sc., with Chemistry (principal) and Physics (subsidiary); offers two years' courses in Chemical Engineering & Textile Chemistry and admits post-graduate students for research work. Total number of students in the dept. 68.

Annual expenditure Rs. 2,00,000|-. Capital investment Rs. 13,00,000.

Victoria Jubilee Municipal Technical School, Poona City. Founded in 1889 by the Poona City Municipality. Offers courses in Civil Electrical and Mechanical Engineering; standard taught is not clearly stated.

| | |
|---|---|
| Total number of students | 98 |
| Annual expenditure | Rs. 10,000\|- approx. |

No tuition fee is charged. Practical training is imparted in the Municipal Workshop.

College of Engineering—Poona. Founded in 1885 by the Government of Bombay; offers degree course in Civil, Electrical and Mechanical Engineering (three years' course after Inter-science), and three years' Diploma course in Civil Engineering, Electrical and Mechanical Engineering for Matriculates.

Total number of students in all the courses together is about 540.

Total annual expenditure is about Rs. 2,00,000|-.

Victoria Jubilee Technical Institute, Bombay—offers courses in Electrical, Mechanical & Sanitary Engineering, Applied Chemistry, Textile, etc.

## PUNJAB

Punjab College of Engineering and Technology, Lahore—Founded in 1923, by the Government; five years' degree course in Mechanical and Electrical Engineering since 1923, in Civil engineering since 1940, admission requirement F. A. or F.Sc., with mathematics and science; five years' Foremanship course in Mechanical and Electrical Engineering for matriculates; three years' Apprenticeship course for literate students with some knowledge of English. Number of students in the 3 courses are 129, 180 and 39 respectively. Total number of students on the roll 348. Annual expenditure Rs. 2,00,000|- approx.

Punjab Agricultural College and Research Institute—Founded in 1909 by the Punjab Government. Offers a large number of courses of various standards—for matriculates—(1) B.Sc. degree course in Agriculture (four years); (2) Certificate course (2 years); (3) Ladies Fruit and Vegetable Preservation course (two weeks); (4) Summer Fruit and Vegetable course (two weeks); (5) Bee-keeping course at Katria (2 months); (6) Dairy class (six months) (7) Winter fruit and vegetable preservation course (10 days); (8) Vernacular class (one year) (9) Mali class (1 year); (10) fruit and vegetable preservation course for B.Sc's in Agriculture or F.Sc's in Chemistry (7 months) (11) Estate Manager's course (2 weeks); (12) Lohar class (6 weeks); (13) Fruit Culture class (2 weeks); (14) Teachers' Training class for S.A.V. Teachers (one year); (15) 1½ years' M.Sc., course in Agriculture; (16) Two weeks' course in Poultry-keeping. Total number of students in all the courses together 632. Annual salaries of the teaching staff Rs. 2,06,000|-; other details are not given in the reply.

As directed by M. Afzal Husain Esq., Vice-Chancellor of the Punjab University, questionnaires were sent also to (1) Islamia College, Peshawar, (2) The Khalsa College, Amritsar, (3) The Hans Raj Technical School, Lahore, and (4) The Victoria Jubilee Technical Institution, Lahore. But no replies were received from these institutions.

## MADRAS.

College of Engineering, Guindy—Founded by the Madras Government as a Survey School in 1834 and raised to the status of a College in 1864. Offers four years' Degree courses in Civil, Electrical, and Mechanical Engineering for I.Sc., passed students and Diploma courses in Overseership and Sub-Overseership for matriculates.

Total number of students in the Degree courses 386, and in the Diploma courses 296. Annual recurring expenditure—Rs. 2,75,000|-, capital investments in land, buildings, and equipments, about Rs. 40,00,000|-.

J. V. D. College of Science and Technology, Waltair-Founded in 1932 under the Andhra University. There are courses offered in Chemical Technology (Sugar, Chemical Engineering, Pharmacy, Applied Physics, etc.) for B.Sc., and M.Sc., degree. As constituted at present it is difficult to get figures for the Technology courses alone as distinguished from the pure science courses. There are about 120 students in all Technological courses together.

Agricultural College—Coimbatore—Founded in 1876 as an Agricultural School; got affiliated to the Madras University in 1920 for degree course in Agriculture; in 1938 College and Research Departments got amalgamated. Admission qualification—Intermediate Examination in Arts and Science. Three years' degree course.
Total number of students—125. Annual recurring expenditure Rs. 1,00,000|-.

## ASSAM

Government Weaving Institute—Gauhati. Founded in 1920 by Assam Government. Training in cotton and silk weaving—2 years' and one year's courses respectively. Admissiion qualification—Class VIII. Total number of students—about 50.

| | | |
|---|---|---|
| Annual recurring expenditure | .. | Rs. 27,000\|-. |
| Capital investment | .. | „ 100,000\|- |

Technical School, Jorhat—Founded in 1927 by Assam Government. Offers the following courses:—(1) Mechanical Apprenticeship (3 years' course) (2) Woodworking (3 years); (3) Motor Mechanic

(Junior Section) (2 years); (4) Motor Mechanic (Senior Section) (3 years); (5) Bell-Metal Work (1 year); (6) Electroplating (1 year).

| | | |
|---|---|---|
| Total number of students in all the sections together | .. | 115 |
| Annual recurring expenditure | .. | Rs. 28,000\|- |
| Capital Investment | .. | „ 181,000\|- |

Surma Valley Technical School, Sylhet—Founded in 1923 by the Assam Government. Offers the following courses: (1) Mechanical Apprenticeship (3 years), (2) Weaving (2 years); (3) Motor Mechanic, (4) Wood-working (3 years).

| | | |
|---|---|---|
| Total number of students | .. | 111. |
| Annual recurring expenditure | .. | Rs. 30,000\|- |
| Capital investment | .. | „ 70,000\|- |

Silghat Industrial and Technical School—Founded in 1920 by public enterprise. Three years' course in Carpentry. No academic restriction to admission.

| | |
|---|---|
| Total number of students | 20. |

Sakti Asram—Founded in 1931 by Swami Yogananda Giri. Admission qualification—M. E. Standard; training in weaving (2 years), carpentry (3 years), tailoring (1 year), agriculture (1 year).

| | | |
|---|---|---|
| Total number of students about | .. | 30. |
| Annual recurring expenditure | .. | Rs. 5,000\|- |

Fuller Technical School, Kohima—Founded in 1908 by the Assam Govt. three years' course in carpentry, black-smithy and stone-masonry.

| | | |
|---|---|---|
| Total number of students | .. | 27. |
| Annual recurring expenditure | .. | Rs. 8,000\|- |
| Capital investment | .. | „ 25,000\|- |

## SIND.

N. E. D. Engineering College—Founded in 1922 by Sind Collegiate Board; offers three years' degree courses in civil, mechanical, and electrical engineering for Inter Science passed students; three years Diploma Courses in Overseership (Civil Engineering) and Foremanship courses (Electrical and Mechanical Engineering) and two years' course in Wireless Telegraphy and Telephony for matriculates; Two Years' Apprenticeship course for non-matriculates.

| | | |
|---|---|---|
| Total number of students in the college. | | 430. |
| Annual recurring expenditure | .. Rs. | 1,12,000\|- |
| Capital investment | .. ,, | 4,55,000\|- |

Victoria Jubilee Technical Institute, Sukkur—Founded in 1894. Apprenticeship courses for non-matriculates in carpentry (3 years), Mechanics (2 years), Wood-turning (1 year), Drawing (2 years), Electricity (1 year), Electroplating (1 year), Radio (1 year).

| | | |
|---|---|---|
| Total number of students in the Institute | .. | about 75. |
| Annual recurring expenditure | .. Rs. | 9,000\|- |
| Capital expenditure | .. ,, | 55,000\|- |

Sind Radio Engineering institute, Karachi. Founded in 1936 by Mr. A. N. Khushahani. Only three students on the roll.

Municipal Technical School, Jacobabad. Founded in 1889 by the Municipality. Details regarding the courses offered not shown in the reply.

| | | |
|---|---|---|
| Annual recurring expenditure | Rs. | 7,000\|- |

Harijan Handicrafts Institute. Founded in 1934. Details of training not shown in the reply.

| | | |
|---|---|---|
| Annual recurring expenditure | .. Rs. | 10,000\|- |

Technical School, Ghotki—Founded in 1933 by Mr. Tulsidas R. Talrej, details not given; most probably training in hand-loom weaving is imparted.

## BENGAL.

Only two institutions sent replies to the questionnaire. Government Inspector of Technical and Industrial Institutions sent a list of the schools under the Department of Industries in the year 1938-39 which is attached herewith. But details regarding them are not obtained. In absence of replies to the questionnaire this part of the report is very incomplete.

Bengal Engineering College, Sibpur. Founded in 1840-1850. Controlled by the Bengal Government.

Offers four years' course in Civil, Electrical and Mechanical Engineering and Metallurgy. Also a four years' Diploma course in Mechanical and Electrical Engineering & Associateship in Mechanical Engineering.

Admission qualification—Inter Science Examination.

| | | |
|---|---|---|
| Total number of students in the College | | 300. |
| Annual recurring expenditure | Rs. | 4,00,000\|- Approx. |

Total capital investment not available.

College of Engineering and Technology, Bengal. Jadavpur—Founded in 1906 by public enterprise (National Council of Education, Bengal); no connection with the Government in management or finance. Offers the following courses: (1) Mechanical, (2) Electrical, and (3) Chemical Engineering (five years for matriculates and four years for I.Sc. passed students), (4) Junior Technical Course (three years) in Mechanical and Electrical Engineering for Matriculates, (5) Two years' course in surveying and draftsmanship for matriculates and non-matriculates, (6) two years' course in agriculture for non-matriculates, (7) Four years' part-time theoretical training for factory employees, specially Calcutta Corporation apprentices.

| | | | |
|---|---|---|---|
| Total number of students | .. | | 1070 |
| Annual recurring expenditure | .. | Rs. | 1,50,000 |
| Capital investment | .. | ,, | 13,00,000 |

## List of Technical and Industrial Institutions under the Department of Industries, Bengal, in the year 1938-39.

## RAJSHAHI DIVISION.

### Darjeeling

1. Mission Industrial School, Kalimpong.
2. Industrial School, Darjeeling.

3. Industrial School, Kurseong.
4. St. Alphonsus' High English School (Industrial Section) Kurseong.

### Jalpaiguri.

1. Umagati Vidyamandir, Jalpaiguri.
*2. Peripatetic Weaving School, Jalpaiguri.
*3. Peripatetic Weaving School, Santalpur.

### Dinajpur.

*1. Peripatetic Weaving School, Raniganj.
*2. Peripatetic Weaving School, Balurghat.

### Rangpur.

1. Weaving School, Bhogdanga.
2. Weaving school, Bhendabari.
*3. Bayley Govindlal Technical School, Rangpur.
4. Model Jute Weaving School, Rangpur.

### Malda.

*1. Nursery School, Piasbari.
*2. Government Weaving School, Malda.
*3. Peripatetic Weaving School, Sibganj.
*4. Peripatetic Weaving School, Anail, P. O. Muchia.
**5. Peddie Reeling School, Malda.
6. Industrial School, Dadanchak, P. O. Manakosha.

### Rajshahi.

1. Diamond Jubilee Industrial School, Rajshahi.
2. Deaf and Dumb School, Rajshahi.

### Pabna.

1. Weaving School, Ullapara.
2. Weaving School, Shahzadpur.
*3. Elliot Banamali Technical School, Pabna.
4. Aided Weaving School, Enayetpur.
5. Improved Weaving School, Enayetpur.
*6. Government Weaving School, Pabna.

*7. Peripatetic Weaving School, Amdanga.
*8. Peripatetic Weaving School, Aminpur, P. O. Bazar-Aminpur.

### Bogra.

*1. Edward Industrial School, Bogra.
2. Weaving School, Adamdighi.
3. Peripatetic Weaving School, Sherpur.

## BURDWAN DIVISION.

### Birbhum

1. Sriram High English School (Industrial Section), Sultanpur.
2. Sriniketan Silpabhavan, Viswabharati, P. O. Surul.
3. Santiniketan, Viswabharati, Bolpur.
4. Government Weaving School, Suri.
5. Peripatetic Weaving School, Sainthia.
6. Peripatetic Weaving School, Adda, P. O. Suri.

### Bankura.

1. Wesleyan Mission Girls' Industrial School, Bankura.
2. Technical School, Vishnupur.
3. Industrial School, Maliara.
4. Government Weaving School, Bankura.
5. Peripatetic Weaving School, Salboni.
6. Peripatetic Weaving School, Jhantipahari.
7. Peripatetic Weaving School, Seranga.

### Burdwan.

1. District Board Technical School, Burdwan.
2. Methodist Mission Industrial School, Raniganj.
3. Peripatetic Weaving School, Salimabad.

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* Denotes Government Institutions.

** Denote Government-managed Institutions.

### Midnapore.

1. Weaving School, Midnapore.
2. Bengal-Nagpur Railway Apprentices' Technical School, Khargpur.
3. Weaving School, Barabari, P. O. Bara-Basudebpur.
4. Weaving School, Dwariberia, P. O. Lakshya.
5. Technical School, Tamluk.
*6. Peripatetic Weaving School, Salboni.
7. Santal Middle English School (Industrial Section) Bhimpore.

### Howrah.

1. Ramkrishna Mission Industrial School, Belur Math.
*2. Peripatetic Weaving School, Bankra.

### Hooghly.

1. Moberly Technical School, Hooghly.
*2. Bengal Textile Institute, Serampore.

## PRESIDENCY DIVISION

### Murshidabad.

1. Murshidabad Deaf and Dumb School, Berhampore.
2. L. M. S. Women Industrial School, Berhampore.
*3. Peripatetic Weaving School, Tiakata-Nowada, P .O. Amtala.
*4. Silk Weaving and Dyeing Institute, Berhampore.
*5. Nursery School, Berhampore.

### Nadia.

1. R. C. Girls' Technical School, Krishnagar.
2. C. M. S. Technical School, Hatchapra.
3. Bipradas Pal Chaudhury Technical School, Krishnagar.

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* Denotes Government Institutions.

** Denote Government-managed Institutions.

4. Weaving Institute, Santipur.
*5. C. E. Z. Industrial School, Sriratampur.
*6. Peripatetic Weaving School, Kustia.

### Jessore.

1. Nari Silpa Sikshamandir, Kalia.

### Khulna.

1. Saudamini Nari Silpa Vidyamandir, Senhati.
2. Coronation Technical School, Khulna.
3. P. C. College Weaving School, Bagerhat.
4. Weaving School, Tuzalpore, P. O. Bagerhat.
5. Guznavi Industrial School, Bohera, P. O. Gurugram.
*6. Government Weaving School, Khulna.
*7. Polytechnic School, Piljanga.

### 24-Parganas.

1. C. E. Z. Widows' Industrial School, Baranagar.
2. C. E. Z. Orphan Boys' Industrial School, Baranagar.
3. C. E. Z. Special Primary Technical School, Baranagar.
4. L. M. S. Boys' Industrial School, Kaurapukur, P. O. Tollygunge.
5. L. M. S. Women's Industrial School, Kaurapukur, P. O. Tollygunge.
6. Church of Epiphany Industrial School, Thakurpukur, P. O. Barisha.
7. Calcutta Blind School, Behala.
8. Loreto Convent Industrial School, Morapai, P. O. Magrahat.
9. Weaving School, Punra.
10. Industrial School, Baikuntapur, P. O. South Govindapur.
**11. Technical School, Kanchrapara.
**12. Ordnance Technical School, Ishapore.
*13. Peripatetic Weaving School, Garia.

14. Indian Industrial Mission, Cossipore.
15. All-Bengal Women's Industrial Institute, Dum Dum.
16. Weaving School, Karanjali.

### Calcutta.

1. Calcutta Technical School, 110 Corporation Street.
2. Deaf & Dumb School, 293 Upper Circular Road.
3. Saraj Nalini Dutta Industrial School, 60B Mirzapore Street.
4. Mahila Silpa Bhavan (under Nari Siksha Samiti)
5. Hindu Mahila Ashram, 11 Shanti Ghosh Street.
6. Maharaja Cossimbazar Polytechnic Institute, 3, Nandlal Bose Lane.
7. St. John Baptist Mission Industrial School (Needle work class) 17, Landsdowne Road.
8. Basharat Industrial School, 24|19 Kakurgachi Rd.
9. Muslim Orphanage Industrial School, 8 Syed Saleh Lane.
10. Karaya Industrial School, 8B Nasiruddin Road.
11. Calcutta Orphanage Technical School, 1-2 Balaram Ghosh Street.
12. Banipith Girls' Institution 6|1 Vidyasagar Street.
13. Muslim Women's Industrial School, 6 Gorachand Road.
*14. Bengal Tanning Institute, Canal South Road, Pagladanga, P.O. Entally.
*15. Industrial Research Laboratory, Pagladanga, P.O. Entally.
16. Nari Siksha Pratisthan, 5 Lansdowne Lane.

## DACCA DIVISION.

### Mymensingh.

1. Kashikishore Technical School, Mymensingh.
2. Industrial School, Banduldiha, P. O. Taljanga.
3. Mission Industrial School, Birisiri, P.O. Hatsibganj

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* Denotes Government Institutions.
** Denotes Government-managed Institution.

4. Weaving School, Dhala-Mulgaon, P.O. Jhanjail.
*5. Swarnamayee Mahila Bayan Vidyalaya, Mymensingh.
6. Industrial School, Gaffargaon.
7. Weaving School, Gouripore.
8. Weaving School, Sherpur.
9. Deaf and Dumb School, Mymensingh.
*10. Government Weaving School, Tangail.
*11. Peripatetic Weaving School, Nandina.
*12. Peripatetic Weaving School, Kuliarchar, P.O. Tatarkandi.
*13. Peripatetic Weaving School, Dewanganj.

## Dacca.

1. Deaf and Dumb School, Dacca.
2. Sir Salimullah Moslem Orphanage Industrial School, Dacca.
3. Hindu Orphanage Industrial School, Dacca.
4. Ananda Ashram Industrial School, Dacca.
5. Hindu Widows' Home Industrial School, Dacca.
6. Polytechnic Institute, Tejgaon.
*7. Government Weaving School, Dacca.
*8. Peripatetic Weaving School, Patgram.

## Faridpur.

1. Mission Industrial School, Faridpur.
2. Widows' Industrial School, Orakandi.
3. Donovan Girls' School (Weaving Section), Madaripur.
*4. Peripatetic Weaving School, Gopalganj.

## Bakerganj.

1. Deaf and Dumb School, Barisal.
2. Weaving School, Joyshirkati.
*3. Peripatetic Weaving School, Harinafulia, P.O. Raipasha.
*4. Peripatetic Weaving School, Kamarkati.

5. Chandrawip Institution, Madhabpasa.
*6. Government Technical School, Barisal.

## CHITTAGONG DIVISION.

### Noakhali.

•1. Model Weaving School, Feni.
*2. Government Weaving School, Begumganj.
3. Industrial School, Begumganj.

### Tippera.

*1. Bengal Survey School, Comilla, P.O. Survey School.
2. Elliore Technical School, Comilla.
3. Industrial School, Konda.
4. Industrial School, Nanggolkot.
*5. Peripatetic Weaving School, Ashuganj.

### Chittagong.

1. Weaving School, Katrihat.
2. Apprentices' Technical School. Pahartali.
3. Weaving School, Sripur-Kharandwip.
4. Weaving School, Hulain, P.O. Yakuodandi.
5. Avaya Weaving School, Fatenagar, P. O. Gasberia.
6. Islamia Ideal Home for Girls, Imdad, Villa, Chanandpura, Chittagong.
7. Muslim Silpa Vidyalaya, Baraiyadhala.
8. Islam Mission Yatimkhana, Chittagong.
•9. Helping Hand Home, Chittagong.
*10. Government Weaving School, Zorwarganj.
11. Satsang Nari Silpasram, Chittagong.

### Central Provinces & Berar.

The Director of Industries of the Central Provinces Government informed that there are three Government and nine Government-aided industrial schools in the Province. The course of training extends to three years in

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• Denotes Government Institution.

Denotes Government-managed Institution.

Carpentry, Blacksmithy and Boot-making. The three Government Schools are located at Nagpur, Akola, and Jubbulpore; and the nine aided schools at Amraoti, Khamgaon Buldana, Khandwa, Darwana, Chandametta, Raipur, Dhamtari, and Saugor. Tailoring classes (three years' course) have been added to the schools at Jubbulpore & Akola. To these two schools are attached cottage industries institutes where training in cotton-weaving, carpet and durrie weaving, toy-making and lacquer work, and cane and basket manufacture, is given. The total number of students in all the schools is 606. There are no adequate facilities in the province for higher technical and industrial training, so the Government awards 7 scholarships to deserving students of the province to get training in institutions in other provinces. Further details were not obtained.

The Registrar, Nagpur University, informed that there is at present no Technological Department functioning in the University but that very soon there would be such a department maintained out of the income of the bequest of about Rs. 55,00,000|- by the late Rao Bahadur D. Laxminarayan to the University. Under the terms of the bequest only the Hindu students residing in the Central Provinces & Berar would be eligible for admission to the Institute. It is proposed to impart training in Oil Technology to begin with.

## North West Frontier Province.

The Director Public Instruction of the province informed that there is no industrial or technical school in the province.

## Mysore.

College of Engineering, Mysore, Bangalore—founded in 1917 by the Mysore Government. Admission qualification I.Sc. Offers four years' degree courses in Civil, Mechanical & Electrical Engineering.

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|---|---|
| Total number of students in the college | 226 |
| Salaries of Teaching staff per year. | Rs. 60,000 |

Other details not obtained.

School of Engineering, Bangalore•—founded in 1922 by the Mysore Govt. Offers three years' Diploma courses in Civil, Electrical and Mechanical Engineering.

• Denotes Government Institution.

Preference in admission is given to students of the Depressed classes. Total number of students in the school—175.

Salaries of the teaching staff per year Rs. 32,000|- Other details not obtained.

### Hyderabad.

Engineering College, Osmania University. Founded in 1922 by Nizam's Govt. Offers (1) Three years' degree courses in Civil and Mechanical Engineering for I.Sc. passed students. Total No. of students 72. (2) Three years' Overseership course in Civil Engineering for matriculates—Total Number of students 103.

| | |
|---|---|
| Annual recurring expenditure | O.S. Rs. 1,50,000\|- |
| Capital investment | O.S. Rs. 7,40,000\|- |

### Baroda.

Kala-Bhavan Technical Institute. Founded in 1890 by Maharaja Sir Sayajirao Gaekwar III and maintained by the Baroda State. Offers Diploma and certificate courses in Civil, Electrical & Mechanical Engineering, Textile, Chemical Technology of Textile, Oils and Soaps, Architecture, Drawing and Painting, Photoprocess & Commerce. Diploma courses for matriculates are of four years and certificate courses for non-matriculates for three years.

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|---|---|
| Total Number of Students | 630 |
| Annual recurring expenditure | Rs. 1,56,000\|- |
| Capital investment. | Rs. 16,50,000\|- |

# PART II.

National Planning of a country must necessarily be a comprehensive one embracing in its consideration every branch of the life of the people. It is difficult to divide national activities into water-tight compartments, every branch being directly or indirectly influenced by every other. The National Planning Committee has very correctly sent the final or interim reports of the various Sub-Committees appointed by it to every sub-committee so that there may not be fundamentally conflicting reports. From a perusal of these reports one fact predominantly emerges that all reforms and all plannings inevitably depend on the economic structure of the society. Planning is to be made on a more or less materialistic view of life and society though the ultimate guiding principle may be spiritual and transcendental, which is not always manifest on the surface. The National Planning Committee has not yet given the Sub-Committees any definite and clear-cut lead in this direction; consequently the system of technical education drawn up by the Technical Education Sub-Committee will have to be modified according to the future economic structure of the country that may be planned and given effect to.

In any complete system of education of a people, technical education occupies an intermediate stage. Under modern conditions one does not think of organised technical education of the illiterate. The primary or basic education comes first in the scheme. At present only about ten per cent of the people of India are literate. So the first problem in the education reconstruction is the liquidation of illiteracy. A comprehensive scheme for primary or basic education for the whole people has been drawn up under the title of Wardha Scheme. It is a notable attempt and as far as it goes it is the best that has been yet framed. We have to accept it as the first stage in the whole system of education.

There are certain points in the Wardha Scheme which should be carefully reconsidered, and if found necessary, modified. Doubts and objections to some of these points, to be mentioned below, have already been raised; still, considering the importance of these vital principles which will guide the whole system, they deserve mention by this Sub-Committee.

The Scheme is based on the tacit assumption that the economic structure of the village-life will remain more or less as it is and the scheme of primary education has been framed for the village boys and girls. Apart from the educative value of manual training from the early stage, the teaching of a craft and an art to make the child self-supporting at the age of 14 or 15 has been attempted. Teaching of all subjects like history, geography, arithmetic, sciences, language, painting, music, etc. is to be imparted with reference to an art or craft chosen for any particular school. By the end of the school-career the adolescent child has learnt a craft and is able to start a vocational life. Moreover the school is expected to be maintained by the sale of the goods produced by the students.

Objections against these principles have been raised by various people. We also record our protest which may be repetitions of opinions expressed by other people elsewhere.

The Scheme virtually means starting of vocational training at the very first stage of a child's education. Vocation becomes the principal object of education; or the art or the craft which is to become the vocation becomes the medium of teaching. Too much stress on vocation at such age is spiritually harmful and teaching of general subjects through such a single narrowed-down medium makes the knowledge of subject superficial and defective. In Soviet Russia such an experiment of teaching Chemistry, Physics, and other Sciences through the medium of an industry was tried and has proved a failure; they have now reverted to the teaching of sciences in the schools in the usual way drawing illustrations and applications from all possible sources. The method proposed in the Wardha Scheme will give a narrow and shallow knowledge of the subjects. We agree with Prof. K. T. Shah in his condemnation of "Exchange Motive" in the scheme. Teachers will, in most cases, try to increase production at the expense of teaching and the young students will likewise be imbued with the worldly spirit of making profit at an early age. Much has been said on this point and no further reiteration by this Sub-Committee is needed here.

The contents of the syllabus for these primary schools are satisfactory; compared with the syllabus of the existing schools of the same standard it appears to be somewhat ambitious. With the elimination of the English language which absorbs a very large amount of the school time and energy of the students and with the introduction of the mother-tongue as the medium of instruction much can be achieved. Modification of the syllabus can be attempted only after sufficient trial of the proposed syllabus with the help of properly trained teachers. We would like to draw the attention of the Committee to a few minor points in the syllabus.

Algebra is entirely omitted. Present practice in western countries is to run the teaching of algebra and arithmetic side by side at as early a stage as possible. This should be tried in our schools as well. Solution of arithmetical problems by the algebraic methods (i.e. with symbols and equations) is easier than the usual arithmetical methods.

Continuation of the British units of length, area, volume, weights, and currency can be easily avoided. A large part of the Indian text-books on Arithmetic is covered by these foreign units. Reduction (ascending and descending), addition, subtraction, multiplication and division with these different units unnecessarily absorb a considerable portion of the time devoted to mathematics without any proportionate gain. Similar and greater benefit will be attained if centesimal system be introduced for all Indian units.

From the pedagogic point of view technical or vocational education should not and cannot efficiently be taught in primary schools. Teaching of drawing and sciences and manual training are intended for giving the students a technical bias. Choice of a vocation and actual vocational training should come at a later stage.

The most important purpose of primary education is to teach the students to express themselves in writing and speech clearly, correctly, and logically in their mother-tongue. This aim is not fulfilled in the existing schools because they are understaffed and the teachers themselves are not properly trained and adequately paid. Most of them take up the teaching profession as a last resort failing to get suitable employment in other lines. They are generally failures in life without the temperament and idealism required of a true teacher. Being ill-paid they take up other work for augmenting their income and naturally become only part-time workers. To give effect to the Wardha Scheme and to hasten the removal of illiteracy, the authors of the scheme have recommended training of teachers on a large scale to staff the schools adequately. Success of the scheme will depend largely on proper selection of the teacher-trainees, fulfilling the conditions mentioned before.

Primary or basic education covers a period of seven years, so the child leaves the school at the age of about 14. It may be assumed that under proper conditions of teaching in the schools, 90 per cent of the students should be able to finish the school course. As pointed out before, the curriculum of the primary or basic school according to the Wardha Scheme seems to be rather ambitious. Proper, i.e. physically and mentally possible, contents of the curriculum can be determined only after due trial of the scheme for 4 or 5 years. Education up to this standard should be free and compulsory for all children and may be co-educational if not strongly objected to by any particular community or locality in large numbers. According to the Wardha Scheme, except for the capital expenditure and purchase of school produce, if necessary even at a higher price, the State is not to contribute any money towards the maintenance of the school. Students pay for the tuition by their work in the technical or vocational section of the school. The current expenditure of the school including the salaries of the teachers is expected to be met by the sale of the goods produced in the technical section by the students. This is what has been called the "Exchange Motive" and condemned by Prof. K. T. Shah and others. Against the apprehended abuse of the principle by the possible over-emphasis on the volume of school-produce by the teachers there is a provision that the teachers are to be paid their salaries from the State Exchequer. But even then the evil remains. Child labour is prohibited in factories. Average maximum age of the students in the highest class does not exceed 12-14. To a certain extent such a system will mean existence of child labour in schools. During this tender age of the students the school should be a place where children should go with pleasure for artistic, aesthetic, and literary development, get introduced to the history, geography and civilization of the country, obtain as much general knowledge of the descriptive sciences, and learn to work with their hands. Basic schools should not be turned into vocational ones. Main departures from the existing conditions being (1) medium of instruction being the mother tongue, (2) education being free and compulsory, (3) contents of the syllabus being more extensive, (4) education being more objective by the inclusion of drawing, manual training etc.

To make primary or basic education free and compulsory these schools should be a direct burden on the State, expenses being met by the Local, Provincial, or Central Government. Education in none of its stages is a secondary matter. Money spent for the purpose is the best kind of investment for national uplift. In the Wardha Scheme, primary education is an indirect and partial financial responsibility of the State but later stages of education have been treated as step-children to be maintained by the students' tuition fees. This matter will be discussed in later sections of this report.

Primary education being compulsory for all, diversion of students to different lines of education and training begins after the primary stage according to the child's intellectual abilities and natural aptitude. Owing to the scarcity of different kinds of vocational and technical institutions in the country and foolish charm for university degrees, students continue in the general lines of education without any definite purpose or liking till they finish the course or are repeatedly declared failures at the examinations. This leads to waste of national labour and wealth. Direct and indirect ways should be found to prevent this waste.

Secondary schools of general arts and sciences of three or four years' course should be established. Seven years in the Primary School and three or four years in the Secondary Schools should prepare a student for admission into the University or higher technical or professional courses. Admission and study in the secondary schools and higher educational institutions are neither free nor compulsory. Ample provision should be made for free admission and tuition of meritorious students of the primary schools in these secondary schools. Study of a western language, preferably English, should commence at this stage, the medium of instruction remaining the mother-tongue. The report of the General Education Sub-Committee is not before us and therefore, this Sub-Committee cannot pass any further opinion on the matter.

As stated before, technical and vocational education should begign only after the primary school period when the boy or the girl is of the age of 13 or 14. The question here arises about the nature of the training.

From the names of the Sub-Committees appointed by the National Planning Committee, the trend of discussions held at its meetings, and the final and interim reports of these Sub-Committees, it can safely be assumed that India is to be self-sufficient for all her needs as far as possible and therefore to be industrialised. Agriculture and cottage industries, main occupation of the population now, however improved, will not solve the problem. In spite of the moral, social, and economic considerations involved, it is neither possible nor desirable to stop the process of industrialisation. Even agriculture has to be carried out ,in large-scale units for scientific intensive cultivation at low cost. Similarly cottage industries, unless they are of artistic nature requiring individual attention of the craftsman. will have to be mechanised and converted into large-scale operations to enable them to stand external and internal competition. In this process of transition, villages will grow into small towns and smaller towns into industrial cities. A large part of the population will be drawn away from agriculture and absorbed into industries. Evils of factory life will have to be minimised by approprite legislation.

After the completion of the Primary School Career a regular well-considered systematic sifting of the students is to be made for diverting them in different lines of education and training. Those who are intellectually gifted and naturally inclined for further academic career will enter the Secondary Schools and the rest will go in for training in Arts and Crafts or Industries.

This choice of different careers will be smooth and voluntary if the remunerations for various subsequent occupations however high and low be not widely different. Only under that condition can the choice of occupation be made according to the natural fitness of the people. At present people do their utmost to prepare themselves for the most lucrative lines of occupation without much regard for their physical, intellectual, and temperamental fitness for such lines. Consequently there is waste of national man-power, and inefficiency. Ratio between highest and lowest salaries in the same establishment is in many cases as 100 to 1 and those in different occupations are even greater. Here again we come to the problem of changing the economic structure. Levelling up of incomes as far as possible will lead to better utilisation of man power.

Those students who take up arts and crafts or industrial training at this stage (i.e. after the primary school career) are to be considered as continuing their studies. Whatever be the line chosen, there is to be a well-defined school-instruction for the subject. These "continuation schools" where theoretical and part of technical training in different arts and crafts would be imparted to the students will be of poly-technic nature. Students' time will be divided between the school and the shops, the factories or the establishments which they will enter as apprentices. The contents of the curriculum will be.

(i) Drawing of artistic or other designs appertaining to different arts, crafts, or industries.
(ii) Cost calculations.
(iii) General Economics & Economics relating to new materials and finished products of the particular art and industry.
(iv) Business Law.
(v) Scientific knowledge applied to them.
(vi) Civics.
(vii) Accounting & Book-keeping.
(viii) Literature.
(ix) Physical Exercise & Gymnastics.

These students are to be not only good artizans and craftsmen but also to be good citizens. The training in these continuation schools and apprenticeship is to cover a period of three or four years. After successful completion of the course, students will be granted certificates and permitted to set up independent practice or take up employment.

Various branches of training in these continuation schools may include amongst others—carpentry, tailoring, cooking, gold and silversmith's practice, dyeing and cleaning, shoe-making, photography, lithography, engraving, printing, metal working etc., etc., i.e. all conceivable arts and crafts. Boys and girls are to be apprenticed in some establishment in the trade and to receive theoretical training in the schools. Either from the beginning or later stages of apprenticeship they are to receive an allowance.

For young people who enter as apprentices in big industrial establishments there are to be schools attached to them or independent polytechnic schools where the apprentices are to receive theoretical training on the lines in the subjects mentioned above. The curriculum is to be of the same comprehensive nature. Period of training may be longer than that in the case of smaller arts and crafts. There will be some wholetime teachers in the schools and others are to be recruited from amongst the industrial establishments themselves.

Here again the problem of economic structure comes into prominence. If there be nationalisation of industries as hinted in some of the reports the problem is simplified. Otherwise there will have to be some sort of compulsion on the industries to take apprentices and to arrange for the school-training of apprentices in cooperation with the Government.

In most of the industrialised countries of the west there are arrangements for such schooling and training of the young people. In some of them a more or less laissez-faire policy is followed and there is some waste. In Germany and Soviet Russia there is to be found strict state-control in the matter. Germany has been industrialised for a long time and Russia within the last twenty-five years has achieved industrial developments on an un-precedented scale. Up till now all attempts, mostly through private endeavours and not much through governmental agency and initiative, have been very inadequate and of a half-hearted nature. The main purpose of the promoters was not so much for industrial development of the country as for removal of unemployment of the so-called educated youngmen of the middle class who form only a microscopic minority of the whole population. If the country is to be industrialised and made self-sufficient as regards its requirements as far as possible, then the present policy of dependence for the same on private enterprise has to be abandoned and industrial planning must be done by the State. This has rightly been one of the purposes of the National Planning Committee. Provisions and arrangements for industrial and technical training of the young people in the already industrialised countries are for an quate supply of technical hands for the maintenance of existing industries; but in India if the country is to be rapidly industrialised, arrangements for such training have to be introduced on a vast scale in a very comprehensive manner.

Young people who for reasons stated before are not to enter secondary schools are to continue their studies in the "Continuation Schools". Such study is to be free and compulsory. The choice of the exact vocation is to be made by recognised vocation tests, natural inclination and temperament, with the consent of the guardians who are to co-operate with the State authorities set up for the purpose. If owing to class prejudice any guardian wants his intellectually less gifted ward to prosecute his studies in the general line in the proposed Secondary Schools, he will have to bear the cost. Education in the Secondary Schools is to be free only for the meritorious students of the Primary Schools.

This is to be an incentive for all to send students to the Continuation Schools and apprenticeship in industrial establishments where they will get free tuition and allowance during the latter stages. Moreover, incomes being more levelled up, as proposed, there will not be the same preference for education of the unfit in general lines.

For drawing up detailed curriculum of the Continuation Schools for different vocations separate sub-committees are to be appointed. These curricula will be of a trial nature and can be modified from time to time as required by experience.

Second stage in technical and professional education will begin after the completion of the secondary schools course and will be of the university standard but not necessarily departments under the authority of the universities. Attempts were made in Soviet Russia to train up full-fledged engineers and technologists by institutions attached to and as part of big industrial establishments where general sciences like physics, chemistry, etc. used to be taught as required by those special industries. The experiment has proved a failure because the students thereby acquire only a superficial knowledge of the science and cannot apply these sciences to new problems. They become so-called "practical" engineers able to maintain a running concern but unable to cope with unforesen difficulties and to suggest new developments. They have an one-track mind and are narrow specialists. There are always exceptions but we are concerned with the averages. To provide technical men for rapidly growing industries Soviet Russia adopted this system of mono-technic educational institutions. After a few years' trial Soviet Government has abolished this system and is now going in for engineering and technological education based on sound theoretical foundation. Monotechnics are giving place to polytechnic institutions with deep grounding in general sciences and mathematics, great stress being laid on the application of these sciences in various industries and technology. Difference between "pure" and "applied" sciences is to be obliterated as far as possible.

In the Secondary Schools, which have a course of 3 to 4 years, students will attain a standard of knowledge somewhat more extensive and intensive than that of the foreign language (i.e. English). Sciences taught in the Primary Schools should be of a descriptive nature and those in the Secondary Schools should be of a mathematical nature (Physics, Chemistry, Astronomy, Drawing, Mechanics etc.) As stated before, the syllabus prescribed for Sciences for the Primary Schools according to the Wardha Scheme appear to be rather ambitious for children below the age of 14. Students in the Secondary Schools will attain an average age of 18 before they leave the schools and will be more mature mentally and physically and so will be able to absorb and assimilate more complicated and accurate scientific knowledge. Syllabus of different subjects for the Secondary Schools is to be drawn up by the General Education Sub-Committee, because these schools will teach both Arts and Science subjects and co-ordination between these subjects is necessary.

From the Secondary Schools students enter either the Universities for Arts and Science subjects or Engineering or Technology Institutions or Medical Colleges and other professional lines.

From this point of view institutions of a polytechnic nature are recommended. There are many subjects which are common for many engineering and technology lines, students of different lines can be taught these subjects together in the same class. Moreover, a better atmosphere for technical knowledge will be created, and students and teachers can exchange views and without much conscious effort make themselves acquainted with other lines of engineering and technology. Theoretically, as many lines as possible should be opened, limiting factors being the growth of industries, natural conditions and resources of the particular locality or province. For example, there will be no sense in opening a course of naval engineering or architecture in institutions situated in the Central Provinces, United Provinces, or the Punjab. Such educational institutions, therefore, will be joint concerns of the Central and the Provincial Governments. Location, number, and courses of instruction will depend on the industries to be established or already in existence in different parts of the country and this location of new industries is to be settled according to the recommendations of the appropriate Sub-Committee of the National Planning Committee.

Syllabus of courses for different lines of training can be drawn up by experts from a careful study and comparison of the syllabus in different Indian and Western institutions. There is a tendency and a general consensus of opinion in U. S. A., and Great Britain for more liberal introduction of cultural subjects (called "Humanities" in U.S.A.) in engineering and technological courses, if necessary, even at the sacrifice of some amount of technical knowledge. sidered as the end of the instructional period. Every insti- Four years' study in these institutions should not be con- tution of this standard should have attached to it post-graduate and research sections. "Refresher" courses should be introduced for those engaged in industries. At present there is not much direct touch between the members of the teaching staff of engineering and technological institutions and industries and governmental departments of engineering and scientific studies. This isolation is to be broken up. Men employed in superior posts in industries and governmental departments are to be part-time teachers in these institutions and teachers should also get as much as possible of their practical training in industrial concerns. The educational institutions need not have large workshops attached to them for practical training of the students. From the very start students engaged in such industries should get acquainted with large-scale industrial operations. More or less sharp difference between technical educational institutions and industries should disappear. Mutual suspicion and low opinion of each other between people engaged in these two classes of profession can be removed if only some of them work jointly.

Our knowledge should be more objective in character. Fundamental theoretical training and research are not to be deprecated; they have their uses in life and industries, if not immediate at least prospective. Teachers of Physics, Chemistry, Geology, Engineering etc. and even those of some branches of Mathematics should be employed in the solution of industrial problems. Teaching thereby will be made more real and lively and not merely an intellectual enjoyment. The present day attitude of the men teaching or studying pure sciences towards men engaged in industrial concerns has been dubbed as "intellectual snobbery" by Bernal in his book "The Social Function of Science." Men employed in industries also have a half amused sneering opinion about teachers of scientific and engineering subjects as theoreticians without any practical sense. Joint work in educational institutions and factories and workshops for both these sets of men will remove these defects.

Every educational institution of the university standard should be equipped with men, machines, and instruments for carrying on advanced research work. At present no engineering educational institution in India has research work as a part of its programme. Civil Engineering is the oldest engineering subject taught in this country, but even in this line all plans and designs of bridges, big buildings, and new cities are done by foreign firms in foreign countries. Professors in engineering colleges in co-operation with Government Engineering Departments should be entrusted with works of this nature.

The above is a bare outline of the planning for technical education for the country. Detailed syllabus, equipment, staff, location, etc. for the institutions for different stages of technical education should be drawn by appropriate sub-committees to be appointed for the purpose. A diagrammatic sketch of the outline is attached herewith.

# Summary of the Report of the Sub-Committee on Technical Education.

After giving a list of Scientific Laboratories and Research Institutes in Part I, the Report proceeds in Part II to outline a national system of Technical Education and Scientific Research in India.

## Part II.

In any complete system of education of a people, technical education occupies an intermediate stage. Primary or basic education comes first in the scheme. At present only about ten per cent of the people of India are literate. So the first problem in the educational reconstruction is the liquidation of illiteracy. The Wardha scheme of primary or basic education for the whole people is the best that has been yet framed and we have to accept it as the first stage in the whole system of education.

There are certain points in the Wardha Scheme which should be modified if necessary.

In the Wardha Scheme the adolescent child learns a craft by the end of the school career and is able to start a vocational life. Here vocation becomes the principal object of education; or the art or craft becomes the medium of teaching. This is spiritually harmful to the child. The method proposed in the Wardha Scheme will give a narrow and shallow knowledge of the subjects. We agree with Prof. K. T. Shah in his condemnation of "Exchange Motive" in the Scheme.

The contents of the syllabus for these primary schools are satisfactory. With the elimination of the English language and the introduction of the mother-tongue as the medium of instruction much can be achieved. We would like to draw attention of the committee to a few minor points in the syllabus.

Algebra is entirely omitted. Algebra and Arithmatic should be taught side by side at an early stage, as in Western countries.

Continuation of the British units of length, area, volume, weight, and currency can be easily avoided and Indian Units should be substituted.

From the pedagogic point of view, technical or vocational education should not and cannot be efficiently taught in primary schools.

The most important purpose of primary education is to teach the students to express themselves in writing and speech clearly and correctly in their mother tongue. This aim is not fulfilled in the existing schools because they are understaffed and the teachers are not properly trained and adequately paid.

Primary basic education covers a period of seven years. Education up to this standard should be free and compulsory for all children and may be co-educational. According to the Wardha Scheme, the current expenditure of the school is expected to be met by the sale of the goods produced in the technical section by the students; the State is not to contribute any money towards the maintenance of the school. This is what has been called the "Exchange Motive" and condemned by Prof. K. T. Shah, and others. Main departures from the existing conditions should be:—

1. Medium of instruction being the mother tongue.
2. Education being free and compulsory.
3. Contents of the syllabus being more expressive.
4. Education being more objective by the inclusion of drawing, manual training etc.

To make primary or basic education free and compulsory these schools should be a direct burden on the State, expenses being met by the Local, Provincial or Central Government.

Primary education being compulsory for all, diversion to different lines of education and training begins after the primary stage; glamour for University degrees without any definite purpose should be discouraged.

Secondary schools of general arts and sciences of three or four years course should be established. Seven years in the primary school and 3 or 4 years in the Secondary Schools should prepare a student for admission into the University or higher technical or professional courses. Admission and study in the secondary schools and higher educational institutions are neither free nor compulsory. But ample provision should be made for free admission and tuition of meritorious students of the primary schools. Study of a western language, preferably English, should commence at this stage, the medium of instruction remaining the mother tongue. From the trend of discussion held during the National Planning Committee meetings it can be assumed that India is to be self-sufficient for all her needs and therefore to be industrialised.

After the completion of the primary school career a regular systematic sifting of the students is to be made for diverting them in different lines of education and training. Those who are intellectually fitted will enter the secondary schools and the rest will go in for training in Arts and Crafts and Industries.

These "Continuation Schools" where theoretical and part of technical training in different arts and crafts would be imparted to the students, will be of polytechnic nature. Students' time will be divided between the school and the shops or the factories, where they will be entered as apprentices. The contents of the curriculum will be:

1. Drawing of artistic or other designs appertaining to different crafts or industries.
2. Cost calculations.
3. General Economics and economics relating to particular art and industry; business law.
4. Scientific knowledge applied to them.
5. Civics.
6. Accounting and book-keeping.
7. Literature.
8. Physical Exercise and Gymnastics.

These students are to be not only good artizans and craftsmen but also to be good citizens. The training in these continuation schools and apprenticeship is to cover a period of three or four years. After successful completion of the course students will be granted certificates and permitted to set up independent practice or take up employment.

Various branches of training in these continuation schools may include, among others, carpentry, tailoring, cooking, gold and silversmiths' practice, dyeing and cleaning, shoe-making, photography, engraving, printing, metal working etc. i.e. all conceivable arts and crafts. Boys and girls are to be apprenticed in these crafts and to receive an allowance.

For young people who enter as apprentice in big industrial establishments, there are to be schools attached to them where the apprentices are to receive training on the lines mentioned above. If there be nationalisation of industries as hinted elsewhere, the problem is simplified.

In most cases of the industrialised countries of the west like Germany and Russia there are arrangements for such schooling and training of the young people. The main purpose in India is the removal of unemployment of the so-called young men and women of the middle class. If the country is to be industrialised and made self-sufficient as regards its requirements, then the present policy of dependence for the same on private enterprise has to be abandoned; and industrial planning must be done by the State. This has rightly been one of the purposes of the National Planning Committee. If India is to be rapidly industrialised, provision should be made for technical and industrial training of the young people for an adequate supply of technical hands for the maintenance of industries.

Young people who are not to enter secondary schools are to continue their studies in the "Continuation Schools". Such study is to be free and compulsory. The choice of the exact vocation is to be made by recognised vocational tests, natural inclination etc., with the consent of the guardians. Education in the Secondary schools is to be free only for the meritorious students of the primary schools.

For drawing up detailed curriculum of the "Continuation Schools" for different vocations, separate sub-committees are to be appointed.

Second stage in technical and professional education will begin after the completion of the secondary schools course and will be of the University standard.

In the secondary schools, which have a course of 3 to 4 years, students will attain a standard of knowledge somewhat more extensive and intensive than that of foreign language (i.e. English).

Sciences taught in the primary schools should be of a descriptive nature, and those in the Secondary schools should be of a mathematical nature (Physics & Chemistry, Astronomy, Drawing, Mechanics, etc.). Syllabus of different subjects for the Secondary Schools is to be drawn up by the General Education Sub-Committee, because these schools will teach both arts and science subjects and coordination between these subjects is necessary.

From the Secondary Schools, students enter either the Universities for Arts and Sciences, or Engineering or Technology institutions or Medical colleges or other professional lines.

From this point of view, institutions of a polytechnic nature are recommended.

Syllabus of courses for different lines of training can be drawn by experts from a careful study and comparison of the syllabus in different Indian and Western countries. There is a tendency in U.S.A., and Great Britain for more liberal introduction of cultural subject (called "Humanities" in U.S.A.) in Engineering and technological courses. Four years' study in these institutions should not be considered as the end of the instructional period. Every institution of this standard should have attached to it post-graduate and research sections. Refresher courses should be introduced for those engaged in industries. At present there is not much direct touch between the members of the teaching staff of Engineering and Technological institutions and industries and governmental departments of engineering and scientific studies. This isolation is to be broken up.

From the very start students in the educational institutions should get acquainted with large-scale industrial operations. Strict differentiation between technical education institutions and industries should disappear. Mutual suspicions and low opinion of each other between people engaged in these two classes of professions can be removed if only some of them work jointly. Our knowledge should be more objective in character. Fundamental theoretical training and research are not to be deprecated. Joint work in educational institutions and factories and workshops for both these sets of men will remove these defects.

Every educational institution of the University standard (including engineering educational institutions) should be equipped with men, machines and instruments for carrying out advanced research work.

The above is a bare outline of planning for technical education of the country. Detailed syllabus, equipments, staff, location etc. for the institutions for different stages of technical education should be drawn up by appropriate sub-committees appointed for the purpose. A diagrammatic sketch of the outline is attached.

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# REPORT ON "EDUCATION" PREPARED BY THE PRIORITIES SUB-COMMITTEE OF THE NATIONAL PLANNING COMMITTEE

In the matter of education the distinction between short-term and long-term plan is difficult to make or maintain, except perhaps in regard to making the yet illiterate adult population literate. By its very nature, education of people of school-going age, so numerous as ours, is a process which must necessarily take time. To be really sound it must be integrated with and fitted into the main Plan of National Development spread over a number of years.

As all social services, of which Education is one of the most important, are mutually interdependent, the progress made in one of these must keep pace with the corresponding advance in all the others. There must be no lopsided development in the country. This is another reason why no short term plan for immediate execution can be satisfactorily framed in this regard.

Nevertheless, if a comprehensive and planned system of national education and all round development is to be put into effect, some urgency must attach to the case of the illiterate adults or adolescents, i.e. that section of the population of school-going age, which, through the process of stagnation or wastage during their school period, has not mastered the rudiments of literacy.

The proportion of illiterates is nearly 90 per cent of the total population, or some 270 millions in British India today, and 350 millions all over the country.

The following may accordingly be taken as problems of special urgency, which may be treated as matters for short term planning to be put, immediately, into operation.

(i) Education of the illiterate adults of both sexes, whether past the school-going age as defined in National Plan, or those remaining illiterate because of wastage or stagnation in their school period.

(ii) Provision and training of teachers, both for imparting literacy to the adults, and for the main system of National Education as part of the National Plan. This will not be achieved all at once. This is continuous process never ending altogether as new teachers would be always wanted to replace those superannuated, or otherwise unavailable for that service. A large-scale beginning must be made immediately in this section of the National Plan.

(iii) Provision of buildings and furniture, needed for the entire programme of National Education under the Plan; including furniture, apparatus, material and other equipment needed for the same. Existing structures, if unsuited for the purpose, will have to be remodelled; and new structures added in required numbers.

(iv) Financial aspect of the plan both in the long range and in the immediate operation.

The proportion of illiterate adult population in India is roughly 85 per cent of the total. There is only 10 p.c. of the population which can, at all, be classed as literate; and, of these, men out-number women by five to one.

According to the latest statistics, a little over 15 millions of the children of school-going age are at school. Taking the age distribution of the population in India, under the census of 1941, children under 15 number, in round terms, 12 crores. Of these some 5 crores may be taken to be under 5 years of age. There are, therefore, 7 crores of children of school-going age in the country, of whom only 1.5 crores are receiving some sort of education.

There remain, therefore, 5.5 crores children and youths for whom immediate action must be taken, if these are not to be a burden, inefficient and inadequate, upon the rest of the community.

To bring this vast number upto an absolutely irreducible minimum level of education, say end of junior basic school, at least 2 years of intensive instruction would be needed. Given 50 pupils of this age to a class, we would need a lakh of buildings with 2 class-rooms each. This number would be reduced in proportion as the ordinary school buildings are utilised for this purpose by adjustment in the time-table.

As for the illiterate adults, we may put their number at 25 crores, in round terms. Of these, women out-number men in the proportion of 5 to 1.

In their case, besides the ordinary verbal instruction from teachers, as in a normal school, measures must be adopted to utilise the Screen and the Radio for a wholesale programme of immediate action. An intensive drive for mass literacy of adults in units of 50 each in towns of 5000 population or more, and in smaller units in rural areas, will require the services of, at least, a million persons giving full time attendance to this job for one year each.

Timing for the literisation of adults will have to be such that those actually at work are able to attend; and take the benefit of the programme. Evening classes after working hours or early morning classes before work starts must be the normal practice in their case.

If working hours are staggered, a full working day of 6 hours may be provided for every instructor in this field and the programme can be very materially expedited, perhaps completed in one year.

For the rural population this task must be arranged during the off season, when active attendance in the field is not needed. With the aid of one talkie and peripatetic radio, this sector can also be expedited; and illiteracy among the adults abolished in, at most, 2 years.

Factories, workshops, and all commercial establishments, as well as other large employers like Municipalities, District Boards, Railways, and other Public Works, as well as Contractors thereunder, must be charged with the responsibility for carrying out this programme in their section, whether the employees are permanent or floating.

The use of the Talkies and the Itinerant Radio will be more effective, at least as aid to the instructor, in rural areas for this campaign of mass literisation, within not more than two years.

Each Province, or administrative unit, should be required to put up its own programme in this regard; and charged with the responsibility of carrying it out as part of the National Plan.

The personnel for giving effect to this item in the National Plan must be found in some system of School Conscription, of those already educated upto a given standard, say men who have completed the secondary stage of Education. Whether they intend to go up for higher education, or take to some occupation, these persons, numbering about 250,000 in all India should be drafted into the national social service, as conscripts have hitherto been drafted for military service. This must be regarded as a sort of poll tax paid in kind by those best able to afford it. It must be a condition precedent to their admission in any occupation, or entrance to any University for prosecuting their own studies further, or acquiring specialised qualifications, that each should have discharged this social duty. It must be a universal obligation from which no exemption should be allowed to any one, except on grounds of permanent invalidation, or specific disability.

Instructors, thus required, will have to be given some training for their task, in the last year of their High School career. This must be a compulsory course, though no examination need be held. A certificate must, however, be granted, saying the holder has duly taken this course and must be admitted to teach the adult illiterates.

The feeding, clothing, housing, and transport of these conscript social servants, must be found at public expense. This cost should not exceed Rs. 5|- per head per month; and the total not exceed Rs. 1½ crores. The housing of this force need offer no difficulty, as the addition school buildings put up, or existing ones expanded and remodelled, would serve for the purpose. Other items of the Conscript's living costs should be comprised in the figure mentioned above.

The burden must be shouldered by Local (Provincial or State) Governments. The task must be carried out through Municipalities and other Local Bodies, with such subsidy as each may need.

This is a purely local Force; and must be used within the region, primarily, in which each individual ordinarily resides. The other sector of Illiterate Adolescents will have to be dealt with somewhat differently.

These remain illiterate, either because:

(a) at the time the National Plan of Education was being first put into effect, they had already passed the minimum school-going age; or

(b) because, in the existing system of education, they were part of the large proportion (over 80) who stagnate, or are wasted.

As regards the first group, their number is difficult to calculate. Assuming they total 5.5 crores,—of age between 7 and 14,—these must be absorbed in the new schools, programmed to be added to the existing ones, or existing schools expanded.

Intensive training for a year to those above 7 and below 9 will bring them upto the level of those who begin their school-career in the 1st year of the National Plan.

For those above 9 years of age, intensive effort to impart a minimum of literacy and education will have to be adopted, somewhat on the lines adopted in the case of the Adult Illiterates.

Those suffering from stagnation or wastage,—now reaching 80 p.c.—must be brought into the main system of National Education; and helped out of stagnation or wastage by better methods of educating the youth of the community.

As the national educational system will continue even in after life, while the recipient is at work, the chances of reclaiming this portion from ignorance or illiteracy are very great.

The cost of this part of the programme will relatively be small, 0|8|- as. per head per month; some 39 crores, which will be required only in the 1st 2 years of the Plan.

The next item under (i) is the most considerable,—educating, as part of the National Plan, the children of the community within the prescribed age period, between 6 and 14 years of age.

Education of the children of the community upto a given minimum standard must be accepted as the absolute and inescapable obligation of civilised society; and, therefore, of the State representing it. The inadequacy of the use of the resources of the community, financial or otherwise, must not be an excuse to avoid or reduce this obligation. Means must be found and expedients devised to meet it at any cost even, if need be, passing on a part of the burden to the next generation.

The process of Education necessarily takes time. The irreducible modicum to be imparted to every child in the community, as part of the National Plan, must take several years,—say 7. The scheme outlined below applies to children between 6 and 14 years of age and extends to the whole of that period.

When this process is first put into operation, there will be already in the community children over the minimum school-going age who are outside the process. We have dealt with these already.

We must begin the process at both ends, so to say,—i.e. take every child of 6 years of age into school, compulsorily equip it with an absolute minimum of education, training and equipment as well as, those at the other end of the school period,—say 10 or over,—who have not received the benefit of compulsory universal national education, and who must receive also their share,—somewhat curtailed, it may be,—of this advantage. In their case the aggregate time passed at school may be two or three years. For the rest, the time compulsorily required to be passed in school cannot be reduced, in any case, below 5 years.

It is an indispensable condition of discharging this obligation that such Education should be provided to all, at least upto the prescribed minimum standard, free of all cost to the recipient or his or her parent or guardian. Not only no fees should be charged for it; all the equipment, books, paper etc. needed for giving and imbibing such instruction, training, or education must be free, and provided at public expense.

This exemption from cost may not be sufficient to induce all parents to send all their children of school-going age to schools. The cost of maintaining them at school in a degree of vitality, energy, and alertness necessary for acquiring and retaining the instruction or training imparted in these institutions, is no inconsiderable item in an average Indian family Budget. Because of this, in all advanced countries, at least one meal, the so-called mid-day meal, is provided, at public expense, to children in the school. It would, therefore, mean a substantial relief and even inducement to parents to send their children to school, if one meal, at least, be given to these children at public cost.

Further, such incidental expense as may be required to correct initial handicaps of particular children, e.g. bad teeth, poor eye-sight, etc. should likewise be provided at the cost of the community.

Medical inspection of school children is nowadays a recognised part of the general administration of the Education Department. Not always is this inspection as efficient and detailed as it might be. What is more serious, even when the medical advice is given after proper examination and diagnosis, the remedies prescribed may be too costly for the average parent to provide. Hence the need of dental and other clinical treatment for ailing or defective children provided at public expense.

With the elimination of any income from school fees, in the basic or primary stage, the problem of finance would necessarily be a very serious matter. At the present time (1942-3) British India spends, from all sources, some Rs. 31 crores on all stages of education, or barely Rs. 1|1|- per head of population.

At the present time, however, one out of every four children entering school in the first division never reaches the final stage of primary basic education.

We are entitled to demand that every pie spent on this service must yield full return. Should the cause of so much (80 per cent) wastage and stagnation lie with the technique of education, the means of the personnel, these must be improved, expanded or replaced.

Even if full returns are—as they must be—obtained from this outlay, it affects but one-fourth of the total population of school-going age in British India. The expenditure will, therefore, have to be increased four times, i.e. approximately Rs. 100 crores per annum to bring us near the desired goal.

But the present day rates of teachers' salaries are intolerably low. They will have to be substantially raised, and other facilities or amenities provided to make the teacher equal to his task. Increase in the number and salaries etc. of the teaching staff, and increased cost of books, meals, apparatus, etc. must raise the cost of the whole programme by, at least, 1|3, i.e. to Rs. 35 crores per annum, for elementary education of excessively high grades.

The period of this stage of education has also to be increased i.e. to 8 years, compulsory, for all. This will further raise the cost by 3|5 or to Rs. 55 crores. The total will now be Rs. 190 crores. Add Rs. 10 crores by way of interest etc. on account of special loans raised to large-scale operations, the minimum cost p.a. for elementary or basic education—free, compulsory and universal—throughout the country cannot be less than Rs. 200|- crores per annum.

All this increase will not take place all at once. It can be easily spread over 10 years, giving an aggregate increment of Rs. 20 crores every year, after allowing for all possible improvements and economies.

Suggestions are outlined in a later section of this Note to show how funds can be found to meet both the current or recurring expenditure as well as the cost for providing buildings, furniture, books, apparatus, and other equipment of a more durable kind, together with such of the industrial establishments, like printing presses, furniture workshops, instrument and apparatus factories, needed to provide the equipment and accessories in a sound system of national Education.

The programme of National Education under a comprehensive Plan cannot remain content only with this. There must be arrangements under the National Plan, both for Pre-School and Post-Basic School Education.

At the present time there is absolutely no provision worth the name for Pre-School Education so far as the masses of the people are concerned. Only in very large towns, and that too, with reference to the relatively richer section of society, are arrangements possible for such Education to be made. Even then they smack more of response to demands of fashion than a systematic organisation, properly fitted into the national scheme of all round popular education.

Training of the little children under six years of age would, of course, be easier in towns where the population is larger, and industrial or commercial employment, in large numbers, much greater. In respect of population not engaged in large scale industrial or commercial establishments, the obligation must be shouldered directly by the Municipal authorities.

This part of the National Education programme must be begun in selected areas, particularly towns, with a given population, say 5,000 or more, which would provide, reckoning at 6 per cent of the population, about 800 children upto six years of age or below.

The obligation for providing pre-school Education to the Nation's children between 2 and 6 years of age cannot, under our present circumstances, be made quite so categoric or universal, and utterly free of cost, as in the case of basic education.

Nevertheless, in so far as it is accepted, it must be shared between employers, local Governing Bodies, and voluntary associations, which may be engaged in this week.

Each industrial, commercial or Public Utility Department, or contractor thereunder, employing hired labour of a hundred workers or more, particularly women with children numbering not less than 30 must be required to provide nursery or Kindergarten or Montessori classes for these children. Room and equipment must be provided by the employer, while the teacher must be provided by the local authority. As for Nursery schools, kindergartens, monstessories and the like, organised for children between 2 and 6 years in each town or large village of 5000 and more, two instituions of this kind can be maintained in each such unit, one by the factories and workshops within that area providing similar instruction for children of their workmen, and the other for the general public maintained by the local authority.

Under the Census of 1941 there are reported to be 2703 such places with an aggregate population between them of 49.7 millions. Let us take it at 5 crores, in round terms. They would provide about 3 million children of ages ranging between 2 and 6 years.

Distance in space will also be an important factor in organising pre-school institutions, particularly in rural areas. Where distances are large, transport arrangements must be provided by Government or local authority to enable children of tender years to get the benefit of this system.

With adequate transport arrangements and feeding of children in the afternoon, such Nursery Schools should be attached in more sparsely populated areas to the Junior Basic Schools staffed preferably with women teachers.

Pre-school Education should be free in all cases. Given, however, the tender age of the children likely to benefit from such arrangements, this cannot be made compulsory. Parents must nevertheless be persuaded either to provide for it, in their own way, or to send their children to such central schools, particularly in towns, where women are accustomed to work outside the home as wage-earners. The principal aim of Education in this stage is not so much drilling in certain heads of instruction; but rather to accustom these infants to work together, and cultivate social habits.

If this Education is provided for the whole of India, it would require roughly, 1 million classes, as calculated by the Sargent Committee. The total outlay would amount to over 3 crores per annum.

The Basic Education system must be free, compulsory and universal. It must be spread over a definite period of 7 or 8 years, into two stages of Junior (first four years) and Senior Basic Schools taking the last three years.

At the point of junction scope must be left for selection of promising youths to be taken into the next higher stage in the National Educational Organisations, Secondary or technical and Vocational institutions, corresponding to what are now called the high schools.

The Basic Schools upto the last year of the period would necessarily be much more important for the largest number.

Three important requirements for carrying out this system to perfection are in the matter of (1) teachers, (2) proper building, books, furniture, apparatus and equipment and (3) funds.

At the present time teachers are insufficient in number, ill-equipped in training, and very poorly paid. A very considerable increase in the number of teachers will be necessary if the entire school-going population within the age periods mentioned is to be brought and kept into school till the end of the period regarded as the irreducible minimum. If we assume that the total number of school-going children number 7 crores in round terms and if we allow 40 pupils, on an average, per teacher, we would require, anyway, nearabout 10 lakhs teachers in addition to those already employed for carrying out this programme.

The bulk of these teachers will have to be recruited afresh—at least a lakh a year—and properly trained and equipped for the task. They must also be paid suitably to attract such trained men to the profession and induce them to devote their whole time and attention to their duty.

In view of the great national urgency of this item in the Plan, the training of new teachers must be comprised in one year, with ample opportunities for refresher courses from time to time.

One lakh recruits annually raised for the profession would require 1000 training schools spread all over the country in Provincial district or Tehsil centres.

The cost of this item would be Rs. 25 lakhs p.a. at the lowest computation.

As in the case of the pre-school Education, so also in this the woman teacher will have to be given a special importance and would have to be recruited in larger and larger numbers, whether the boys and girls are to be trained together in the same institution or in separate institutions.

The training institutions also needed for preparing such teachers will require to be specially provided. A two years course in training with 50 trainees in each class will prepare 100,000 number of teachers in every year, and will make the required quota in the 10 years allowed for this purpose.

The building programme necessary to put up an adequate number of schools all over the country would consist of 5 to 7 lakhs structures. Properly organised and coordinated, so that every school or class has the prescribed minimum compliment of 100 students attending, and having not less than four classes each (Junior Basic School) it may lead to some reduction in that number.

At present there are something like 225,000 institutions of all grades, of which the primary, special and middle schools account for nearly 88 per cent, or 200,000 in round terms. These can be extended and remodelled to meet the requirements of the national programme. When reconstructed, or remodelled, these buildings can easily be made to accommodate Adult literacy classes in off-school hours; as also special instruction and training for the youths outside the age of compulsion when the system is first brought into operation.

Not all the buildings required to educate the whole population will need to be constructed all at once. The programme must be spread over 10 years and must include extension or remodelling of existing buildings, to use them to their maximum capacity for training, both children and the adults into the minimum requirements of literacy. The capital cost of the building programme (say 2 lakhs units) will be not less than 100 crores, spread over 10 years or a loan at 2 p.c. of Rs. 10 crores a year to be repaid in 50 years.

Another 50 crores of capital, invested to provide books and stationery, apparatus, equipments and furniture on the same terms will raise the borrowing programme on this account to Rs. 15 crores per annum.

## Finance

As regards the financing of the programme outlined above, it will, of course, be part of the main scheme of financing the entire programme of National Planning.

As for the immediate requirements, particularly in respect of providing literacy for the Adults as well as for that section of school-going population which does not come fully within the benefit of free compulsory, universal Basic Education, or which, under the present system has stagnated or wasted, the programme should not extend more than two or three years.

Within that space of time, the whole of the Adult illeterate population, both men and women, should be provided with the minimum degree of literacy and education that is needed for continuing the process of adult education.

As regards the latter class youths and maidens of school-going age not receiving the full benefit of Free Compulsory, Universal education there should be an intensive drive to bring them in line with their fellows, either in the Senior or Junior (6-8) Basic School as the case may be. This should also not occupy more than 2 years.

A solution for providing adequate teaching personnel for these classes has already been suggested. For years to come, however, this element will have to be utilised for carrying on the programme of education in a sense wider than that provided for in the general plan, i.e. to bring the entire population in the vast rural areas of the country upto a certain intellectual or cultural level, including literacy, considered indispensable in a civilised society.

The recurring cost of the total programme of National Education upto the Basic School, including literacy for the illiterate adults may be taken at somewhere near 200 crores, per annum. This is 6 or 8 times as much as the present amount spent on Education in British India in all stages, and for all students.

It must be noted that the whole of the amount will not be required all at once, if the programme is spread over, as it inevitably must be, particularly when we start from scratch, say for ten years. The addition to the present Education Budget may not be more than 20 to 25 crores per annum immediately the Plan as outlined above is put into effect. The whole of the annual cost, when the programme is working at full blast, can be met without undue strain and without recourse to the other aspects of the main Plan in the following way:—

It is a well-known fact that the agriculturists in India labour under a heavy load of indebtedness—all the more heavy because the rate of interest was variously reported at from 12 p.c. onwards to 75 p.c. or even more.

If all this debt of the individual agriculturists is consolidated, and taken over by the State,—in each province or State by Central Provincial Bank—and funded at 10 p.c.

simple interest to be paid to the State, the burden on the cultivator would be very substantially lowered. There will also be no indirect concessions, or concealed additions to the debt such as the money-lender is now in the habit of exacting. Given proper funding arrangements, the whole volume of the Debt can be liquidated in a definite period, not exceeding 20 years.

During this period no new Debt should be allowed to be contracted by an agriculturist and none recognised except those duly registered and acknowledged. For most urgent extraordinary needs the State Bank in each province or State may be allowed to make advances to individual cultivators on prescribed terms.

Under the various debt-relief acts in the different parts of the country, as well as under the general legislation, a maximum rate of interest is permitted in a court of Law. In recent years the policy has been to make money cheap. The rate of interest has consequently undergone considerable reduction in all the organised money-markets of the world as well as in this country.

Even if the full benefit of reduction in interest rates for industrial or commercial investments is not passed on to the agriculturist, a rate of 5 p.c. is more than just and sufficient for the creditor who has had, for a long time past, unlimited opportunity to exploit his debtor, and who, consequently, must recognise that a fixed, regular 5 p.c. return guaranteed and paid by the State Bank would be more than enough.

All debts of standing for more than a given period, say 20 years at the most, should be cancelled automatically, when registered for being taken over by the State; and the full relief resulting from that should be given to the agriculturist whose debt is proved to be of longer standing than the prescribed period.

Debts under 20 years standing must be taken over by the State through the Provincial Bank, which will issue its own bonds in exchange to the creditors and secure a corresponding bond from the debtors, with his land etc. pledged as a security. In each province or State Government must guarantee creditor for repayment of capital by a system of annuities, the debt carrying simple interest at

5 p.c. and with arrangements to liquidate both capital and interest within a period not exceeding 20 years in any case.

The total of agricultural indebtedness in this country has been variously estimated. The aggregate capital debt would be about Rs. 15,000 crores if we put the annual agricultural produce at 2,000 crores per annum in all provinces and States put together, and take the capital value at 10 years' purchase, and take the debt to be at least 3|4 of the capital value, though it is, in reality, much more. The annual interest burden on this cannot possibly be less than 100 crores per annum; and the arrangement suggested above, if adopted may make a saving for the State of some 300 crores per annum, at least.

The debtor would receive the benefit not only in the reduced rate of interest, which he would have to pay to the State, say, 10 p.c. in place of the very much higher figure he has been paying all these years, but also in the definite liquidation of the burden within a given period, and legal cancellation and annulment of all indirect burdens. His land would be better cultivated, not only because he is freed from anxiety, but also because he would be placed in a position to provide better seed, manure and all other accessories of fruitful cultivation. His produce would, consequently, also, improve in yield and quality.

The difference between the rate that the State receives from the Debtor agriculturist and that the State pays to the Creditor, viz., 5 p.c. would amount to a total debt of 2000 crores to over Rs. 100 crores per annum, in British India. While in the States, at least half that amount may be added in view of the larger exploitation capacity of the creditor in the States, notwithstanding smaller population and area.

The aggregate would be about Rs. 150|- crores per annum available almost at once. The cost of the programme stretched above will not be more than 20 to 30 crores in the first year or two of the Plan.

Lands freed from the great incubus of indebtedness and brought within a cooperative system permit intensive as well as large scale cultivation and would yield much more than has been customarily obtained all these years.

As recommended in another section of this Report on Priorities new land also would be added to the volume of total cultivation, and all the necessary services and aids to improve the yield of cultivation as well as new lands must also be provided under the planned programme.

The results of such activities may well be expected to a doubling of the total produce, at least within two or three years. This must bring a larger proportion of indirect revenue to the State from land, even after taking full allowance for the radical revision of Land Revenue or Taxation System, throughout the country.

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# SUMMARY OF DEVELOPMENTS SINCE THE NATIONAL PLANNING COMMITTEE'S SUB-COMMITTEE REPORTED ON GENERAL EDUCATION.

The Report of the National Planning Committee's Sub-Committee on General Education was necessarily in outline. The details of the lines of approach suggested were to be worked out by appropriate organisations to be set up while dealing with implementation of the basic recommendation of policy.

On the fundamental question of the obligation of the State to provide Primary or Basic Education, free of cost to every child in the community, there was no difference in any section of public opinion. What difference there was lay in connection with the availability of resources,—financial as well as personnel,—and the practicability of compulsion being universally applied all at once to boys as well as girls, for the whole of a prescribed age period.

### The Problem of Funds—Recurrent and Non-Recurrent.

On the resources side, it was pointed out that the total amount estimated as the cost of the compulsory education to all children of school age for the full period, would not have to be incurred all at once, and that it would necessarily have to be spread over six to seven years, if not more. It would take at least that long to put the Plan into operation, as it would be obviously impracticable to bring all the children, boys and girls, between a given age period, say six to fourteen years, into school all on a given day. Commencement would have to be made at some definite point, say with children of six years on a prescribed day—while those over six and below fourteen on that date will have to be catered for in some other manner.

### A Long-term, Low Cost Education Loan.

Even if compulsion was possible to apply rigorously to all children within the age period, the country would not have the necessary building, apparatus and instruments of teaching, indispensable especially if education is to be conveyed in all subjects through a principal craft.

There would also be the difficulty of securing the requisite number of properly trained teachers, discussed more fully below, which would render any proposal to bring all children of the prescribed age period into school all at once on one and the same day.

This would mean, that as against the one and a half crores of pupils, now in all kinds of educational institutions in British India, we shall have to provide for some six crores scholars for all India in the Basic Stage alone. This needs but to be stated to show its utter impracticability. It may be, that, so far as the necessary number of school buildings, furniture, apparatus, instruments, text-books etc., are concerned, the material could be provided, not from current revenues, but from borrowed funds, the repayment of which may be spread over a long term. To that extent the financial difficulty would be reduced. If reliable estimates were prepared, as part of the Plan, for the number of school-buildings of standard size, needed to carry out the scheme, as also for the proper equipment of all kinds necessary for carrying out this policy of universal compulsory Basic Education, for every child in the country for a minimum period of eight years, an Education Loan of say Rs. 500 crores would have to be raised from all over the country, carrying low or no interest, and redeemable by instalments spread over thirty to fifty years, from which all the required capital outlay may be made. Money for this Loan can be easily found and in abundance, if we have the courage to mobilise and nationalise all the private charities now existing, and utilise for this sacred cause all the liquid wealth our ancestors have donated to religious institutions and foundations.

It may be added also that the entire amount of the Loan will not need to be raised all in one lump. The 100,000 or more additional school buildings needed, and their equipment, will take time to construct. The Loan may, therefore, well be spread over ten years to make the demand more easy to meet. In this way the burden on the current revenues would be insignificant; and the service to the community would be as full as could be desired. The burden will incidentally be passed on, partially at least, to the generation which gathers the fruits of this great investment. The burden on the current revenues would consequently be restricted only to the actual expenditure for the period of education agreed to.

As the bulk of this liability will fall mainly upon the Unit Governments, and as the resources of these Units are inelastic as well as limited the problem of financing the day to day expenditure makes admittedly the greatest difficulty in the way of carrying out the policy.

### Ways and Means for the Recurring Cost.

Various suggestions have been made in recent years to get over this difficulty. The most considerable of these was embodied in the slogan "Earn while you learn", that is to say, educating children through some principal and subsidiary crafts. This, it was argued, would result in products which could be sold, and the proceeds applied to meet the increased expenditure needed on this great means of national development. Many objections were raised, on grounds of principle as well as of practicability against this proposal, which were not all satisfactorily answered. It may, therefore, be said that, while the suggestion has not been dropped altogether, it is nevertheless recognised as unlikely, even if adopted, to meet any considerable portion of the increased expenditure.

If, and when, the entire scheme is in operation the aggregate annual expenditure is estimated to be somewhere near Rs. 400 crores,—Rs. 500 crores if we include Indian States in the programme along with British India, —or more than thirteen times the amount now spent on Education from all sources. The amount that could possibly be realised from such sales, even if there was no other objection to it,—would not exceed Rs. 100 crores net, or barely a quarter of the total needed. It is not worthwhile for this amount to debase the very spirit of Education and turn the school into a shop at a point where it ought to be most rigorously kept free from such taint.

Apart from this radical suggestion for finding the necessary recurring expenditure, others were also in the field. One of these relied upon effecting possible economies in the existing expenditure of Governments; and the savings thus effected to be utilised for this purpose. Another consisted in devising new forms of Local or Unit taxation, which would yield the necessary amount; while a third would resort to the Central Government for grants in aid to carry out this national policy.

So far as the first of these suggestions is concerned,—namely economies in expenditure,—it is unlikely to yield any considerable sums, except possibly in the Department of National Defence. The wages and salaries of public employees, particularly in the lower ranks of the Education Service, are admittedly very low. Bringing them up to anything like a decent minimum wage or standard of living would add so much to the present expenditure, that the increase would swallow up all the savings which could be effected by cutting down higher salaries, and economising in any unnecessary staff or personnel. Even the possibility of reducing the number of posts in public employment today would not serve the turn. For the inevitable expansion of those Social Services like Health and Education, would make the numbers of Public Servants needed very much increased rather than reduced.

Economies,—or rather, better and fuller utilisation of the resources now devoted to Education,—will not afford much help. It is true, today for every rupee spent on Education we hardly get four annas worth of education. The wastage and stagnation in the Primary Education account for 85 per cent. of the money spent under this. But even if all the money were to give a cent per cent return, the saving or additional resources would not exceed Rs. 15 crores all over India.

True, there is room for economy and retrenchment in the Defence Department, especially if we consider the bloated figures on this account of the war years. But in the world we live in, and under the circumstances of today, we cannot expect even here any saving greater than Rs. 100 crores as compared to the Budget for 1947-48. Until all nations have fully and truly disarmed, independent India must be ready to defend herself against any aggressor. That would mean a normal Defence Budget of not less than Rs. 100 crores.

There remains then the only alternative of additional and increased taxation. New taxes, whether by the Unit Government or by the Centre, may meet a fair proportion of the additional expenditure necessary for mass education. There was, however, no time to try out any such suggestion before the war; and the resignation of responsible popular Ministries in many Indian Provinces made the consideration of such sources for this purpose unthinkable.

In the years that have followed the Education (General) Sub-Committee's Report to the National Planning Committee, new sources of revenue have been tapped. But none of them have sufficed to fill up the gulf that still exists in this behalf. With the return of Responsible Ministries in Provinces in 1946, the problem has been in many cases taken up as top priority in the programme of Reconstruction and Development. New sources of revenue, like the sales tax; or additions to existing taxation, like the property and entertainment taxes, or local excises, are being introduced in several provinces for such purposes. There is talk, also, of heavy Estate or Death Duties, whether imposed by the Central, or by any Local Government. Apart from these, the Centre has, in the latest Budget, made experiments in new or increased taxation, e.g. Business Profits Tax or Capital Gains Duty, which, without breaking any new ground, are expected to yield substantial amounts. Between them these may well be expected to yield some Rs. 200—Rs. 300 crores of additional revenue, especially if all channels of tax evasion are effectively plugged out. And the item would be automatically expanding in proportion as the planned programme of national development takes effect.

Under the Constitution now in the making, the Centre's powers of taxation, and its responsibility in regard to what are called the Nation-Building Departments, like Education and other social services, will be much curtailed. The Union Purse will, therefore, be available to the Units not so freely as heretofore. The Units will have to learn to stand entirely on their own legs. Unless, therefore, more radical measures are adopted either in the form of socialisation of all productive industry in the country, or such other expedients as have been suggested in the Priority Sub-Committee's Report on Education, the problem of Education Finance, to carry out the national policy in all its fullness and variety, would remain insoluble.

**Problem of Teachers: Number, Training and Prospects.**

The Financial difficulty, however, is not the only one. On the personnel side, too, the problem is difficult, and would be particularly so, for the initial years of the Plan. In the programme of Compulsory Universal Education for a minimum period of eight years the number of trained teachers required will run into millions for that stage of

Education alone. The children of all India in that group total 60 million. With an average class of 30, we shall need at least 2 million Basic Teachers as against some 3,50,000 now available. Those teachers, again, will not be mere unqualified adventurers, unemployable elsewhere, as many are today. They will have to be specially trained and suitably qualified in their particular profession. If Education is to be real and lasting; if it is to be conveyed through the medium of a principal and some other subsidiary crafts, the teacher's responsibility would be much greater and the demand upon his energy and professional capacity proportionately heavier. Such a Teacher, who makes of his employment a career and a vocation, will not join the profession if Teaching remains the Cindrella of Careers. The Teacher would have to be offered much more attractive terms than is the average today in most Provinces and States.

## Social Conscription.

The mere number, however, of the Teachers needed for carrying out the policy, would constitute the greatest difficulty. A suggestion has, therefore, been put forward to resort to some sort of Social Conscription to meet this urgent need of the country. The number raised by such means would not be all qualified. But by intensively training, in a relatively sort space of time, the required personnel may be found, e.g. out of those now at the end of the present Secondary Stage of Education, those who have reached the Matriculation or School leaving stage. Intensive training in pedagogy to these for six months would suffice. At the present time there are something like over a million and a half scholars in the High Schools all over India. Of these probably one-third or say 5,00,000 would be going up for Matriculation. If all of these are conscripted to serve for at least one year as teachers, or in any other Social Service field that may be deemed equally urgent and necessary before they could be allowed to proceed to University Education, or seek employment, the whole need may be increasingly met from this source for the next five years. And thereafter the place of such conscript can be taken more and more by the trained specialist till the entire Profession is staffed and manned by duly qualified career Teachers in all stages and for all subjects. Without some such expedient as this, the problem of trained and adequate personnel to carry out the national programme for mass education is impossible.

### Recruitment and Prospects of Teaching Personnel.

Note may be taken at this stage of the recommendations of a Committee, appointed by the Central Advisory Board to consider this great question of finding the necessary number of properly trained teachers to give effect to the Plan of Compulsory Basic Education to every child in the country, between six and fourteen years of age. They estimated that for carrying out the programme sketched above, the country would need 14 lakhs of teachers as against 344,000 then in the profession. Their estimates, however, of the total number of scholars coming under this scheme is much below the figure for All-India as the latest Census shows to be likely; and so their estimate of the Teachers needed is also lower.

Apart, however, from this difference their proposals for finding and training the required number are interesting. They suggest the establishment of a large number of Training Schools all over the country. Three hundred Training Schools, each with 500 trainees, will provide 150,000 trained teachers every year. The training, they further suggest, should be: for class I teachers one year; for class II two years. The first category would provide the minimum of training deemed necessary; while the second will afford the full course. There should be liberal provision, they recommend, for Refresher Courses from time to time, so that the teacher does not become fossilisd in his profession. The necessary number of Training Schools may be provided in five years, if all existing Government High Schools are converted into such schools.

The recruitment of candidates for the Teacher's profession must be made, they suggest, with the utmost care as the success of the whole programme will depnd on the teacher. Difficulties of selection will increase as the Plan becomes completed, and in working order, though these difficulties must progressively disappear as the entire adult population comes to be mobilised for some kind of productive work, social service, public utility, public administration or national defence. In the days when we have to resort to Conscription of the educated personnel for the purpose, there would not be any great difficulty. The problems of communal proportion being maintained in the teaching personnel will also not arise, when the Plan is operating on a conscription basis, though later that problem may have to be borne in mind. From the beginning special preference may, however, have to be given to women to attract them to this Profession.

The position and prospects of the Teaching Profession will have to be assured, not only by guaranteeing a decent living wage to every qualified entrant in the profession; but promulgating and enforcing a Charter of Teachers' Rights and Obligations, which need far more to be assured than Rights of Minorities, or even of Citizens. The basic pay must provide a decent living; and adequate provision must be made for reasonable promotion and improvement in prospects to every teacher with reasonable ability requisite training and qualifications, and diligent discharge of duty.

While these suggestions are in the air meeting with greater or less acceptance, the fundamental idea of providing Basic Education free to every child for eight years remains yet to be realised. Beginnings have been made in the several Provincial Governments, where measures for Compulsory Education in the lowest stage have been passed as shown in the table attached. They are important only as symptoms of the age, and earnestness of the policy soon to be adopted all over the country. The subjoined table gives the Provinces where Compulsory Education Acts have been passed, stating the area and age-period to which they are to be applied. These Acts apply in very limited areas specifically named in the legislation, and also for a limited period, and for selected villages to begin with.

So far, however, results have not approached even the fringe of the problem. We need perhaps to treble the total number of scholars in all stages of education and in all institutions. And these must be kept there for much longer years than is the case today. As for that end, the measures taken so far can scarcely be called effective. The Statement attached shows the action taken by the several Provinces to make primary education compulsory and widespread.

## POSITION WITH REGARD TO COMPULSORY PRIMARY EDUCATION

### Number of Areas under Compulsion.

| Province. | | Age-Group. | No. of Towns & Cities. | No. of Villages in Rural Areas. |
|---|---|---|---|---|
| Bengal | | 6-10 | 1 | .... |
| Bihar | | 6-10 | 17 | 1 |
| Bombay | | 6-11 | 20 (e) | 410 (f) |
| Central Provinces & Berar | | 6-11 & 7-12 | 33 | 1,031 |
| Madras | a) | 6-12 | 26 (g) | 102 (b) |
| | b) | 6-13 | | |
| | c) | 5-10 | | |
| | o) | 6-11 | | |
| North-Western Frontier Provinces | | 5-10 | 1 | .... |
| Orissa | m) | 6-11 | 1 | 24 |
| | n) | 6-10 | | |
| Punjab | | 6-13 | 68 | 11,097 |
| Sind | | 6-11 | 1 | 1,307 |
| United Provinces | | 6-11 | 39 | 1,374 |
| Delhi | | .... | 1 | 15 |

(a) Non-Muslims only. (b) Muslim boys.
(c) Non-Muslim girls. (d) Muslim girls.
(e) Includes 9 towns and cities where compulsion for both boys and girls has been introduced.
(f) Includes 211 villages where ,, ,, ,,
(g) Includes 7 towns/cities where ,, ,, ,,
(h) Includes 2 villages where ,, ,, ,,
(m) In one Municipal area.
(n) In one Union Board area.

The responsibility for giving effect to the policy would primarily be that of the Provinces and more so under the New Constitution now in the making. The work, however, done by the Central Government hitherto though essentially exploratory or recommendatory only, may be taken to have paved the way for an intensive drive when the march is resumed the moment the country is free, and able to work its own line of advance.

### The Central Advisory Board.

Among the most important of these steps was the revival of the Central Advisory Board of Education in 1935. That Board has tackled every outstanding question of a comprehensive programme of education for the masses, which is slowly bearing fruit after years of inactivity on account of the War. Its report on the Post-war development of Education is a classic of its kind, which has been summarised in the section on Education, Priorities Sub-Committee Report of the National Planning Committee and included in the present volume also. Its leading ideas have long since been accepted in principle; and the Special Committees appointed by several Provincial Governments,—like those of the U. P. or Bihar,—have attempted a systematisation of these on the Provincial Scale. The Central Advisory Board has placed them on a coordinated national scale.

It would be out of place to consider all the work of this Board in detail. A few of the most outstanding points are noticed below to give an idea of the progress achieved.

The Board has recognised that the initial responsibility for providing mass education as well as Higher Technical Training in liberal arts and sciences, rests exclusively with the Provinces but the Centre should maintain a strong Advisory Board of its own, with very much more enlarged functions than has been the case hitherto. In response to that recommendation the Government of India have constituted a separate Department of Education from the 1st of September, 1945, consisting of several technical officers, besides the usual secretarial help.

### Indian Students Abroad.

Inasmuch as a good deal of educational facilities, particularly for advanced technical training, are not available in this country; and as, in consequence, large numbers of Indian students in various branches of Arts, Science, and Technique have to be sent abroad for higher training, the Central Board has appointed two Liaison Officers for India in the United States; and two Assistant Educational Advisers attached to the office of the High Commissioner for India in London, for the same purpose. A large number of Government scholars have been sent abroad in the two years since the War has ended, but there seems to be very little pre-arranged plans for the utilisation of the talent thus prepared at public expense on the return of such scholars. The arrangements also for the initial selection of these scholars for training appropriate to their aptitude or ability leave much to be desired; while the places where they are to receive such training are also lacking in effective planning for the purpose.

The functions of the new Central Department of Education may be summarised as follows:—

It deals with:—

(i) All types and stages of Education in the areas directly administered by the Centre, e. g. Ajmer Merwara, Coorg, Baluchistan, Delhi enclave, Andamans.

(ii) The so called Central Universities of Benares, Aligarh, and Delhi;

(iii) Financial grants to other Universities through a Universities' Grants Committee set up specially to advise on that matter;

(iv) The Central Advisory Board of Education;

(v) The new Bureau of Education;

(vi) Technical Education;

(vii) Government scholarships for Technical Education;

(viii) The welfare of Indian Students abroad.

(ix) Scientific liaison officers for foreign countries.

(x) Cultural cooperation with other countries.

(xi) Special Education for the demobilised personnel of the army, navy, and air-force recruited for the last war.

Mention has already been made of the appointment of special Liaison Officers in the United States and in Britain. It is open to question if these officers have really been able to help Indian students, particularly in the United States; and whether the salaries paid them have really been earned. The tendency of bureaucracies all over the world to multiply their kind seems to have asserted itself. As, however, the governing policy in this matter will have to be revised, the subject need not be discussed further.

### Grants Utilisation Committee.

A Grants Utilisation Committee has recommended special grants to certain Universities for expansion and extension of their work, particularly in regard to Scientific Research and Technological work they are already doing. At the first Sessions of the Committee, under the Chairmanship of Sir Mirza Ismail, held in January 1946, schemes for the further development of All-India Universities of Benares, Aligarh, and Delhi were considered and adopted. Specific Schemes of advanced Scientific research of All-India importance in other Universities were submitted for sanction and financial help by the Govt. of India. The Central Budget of 1946-47 and 1947-48 has made provision for schemes approved by the Board and sanctioned by the Department.

All these Schemes for specific research are, however, This would be particularly so, if the sector of the Plan mutually uncoordinated. They are not integral part of a comprehensive research programme, which itself is part of the overall National Plan, not only for Education, but also for Industry and Agriculture, Forests and Mines. Without questioning the need for financial aid from the Central Government to such projects, the point may yet be made that the country as a whole would gain substantially if these Schemes are properly integrated **inter se**, and carefully correlated with other aspects of the National Plan. Instead of each Research worker suggesting his own subject, and working in his own way if the subject is approved and the grant sanctioned, some central coordinating authority should prepare, from time to time, programme of research and lists of subjects on which research is needed. The results when available should be integrated and utilised by a similar body concerned with the Plan in execution.

## DEVELOPMENT OF TECHNICAL EDUCATION

### Education and Employment.

One of the complaints against the system of Education obtaining at present in India, is that there exists no real partnership between Education and Industry. This leads to inadequacy of skilled craftsman, and a check on industrial development. A lot of creative intelligence is thus wasted in pure academic channels. In the post-war age, moreover, of intensive industrialisation, there will be an increasing demand for skilled artisans, trained technicians, and experienced research workers if the pace of industrial development is to be maintained according to Plan. Increasing facilities will, therefore, have to be provided for technical education, both in our schools and in the higher institutions of the University stage.

The scheme evolved by the Technical Education Committee of the Board of Education, is commendable. It provides for the splitting up of the Post Primary or Post Junior-Basic Education into Academic High Schools, and Technical High Schools, giving full time education and training for six years. It also envisages Junior Technical or Trade Schools for students leaving the Senior Basic Schools and not aspiring to High School Course. Higher Technical Education has still to be organised on an All-India basis; and for that financial responsibility will have to be shouldered, at least in part, by the Centre. The Committee left it to be dealt with by a Central Body, called the All-India Council of Technical Education.

The All-India Council of Technical Education has now been constituted under the Chairmanship of Shri N. R. Sarker and its functions would be to guide and control the progress of Technical Education in this country. Another Committee, under the same Chairmanship, was convened to report on the development of Higher Tchnical Institutions in India. In its Interim Report, the Committee, while stressing the necessity for four Higher Technical Institutions, one in the north, one in the south, one in the east and one in the west, to serve India's requirements of high grade technologists, equitably and effectively, has urged for the immediate establishment of at least two, one in Calcutta and the other in Bombay. These Institutions must have high standards of graduation of the type of B.Sc. (Tech.) of Manchester and B.S. of Massachusetts Institute of Technology. Speedy establishment of these Institutions will have to be taken up if giving effect to the other aspects of our over-all National Plan for the development of industries, services, and utilities is not to be delayed for want of sufficient trained personnel.

For the training of skilled research workers, the Council of Scientific and Industrial Research (now abolished), gave out a programme of establishing various All-India

Research Laboratories at different centres. The National Physical Laboratory at Delhi and the National Chemical Laboratory at Poona are already taking shape, the former under the directorship of Shri K. S. Krishnan F. R. S., and the latter under Dr. Siddique. A Fuel Research Station has also been established in Bihar for research on the proper utilisation and conservation of coal.

The Science Congress which met recently in Delhi, stressed the need for mobilising scientific man-power in this country, and a Committee has since been formed to assess the scientific man-power of this country.

While it must be maintained that a beginning has been made towards expansion of Technical Education in this country, it will have to be emphasised that all these Schemes which have already been taken up on hand, or which are waiting for execution, must be co-ordinated and brought in as an integral part of a comprehensive Educational Programme. Mutually uncoordinated schemes and schemes without any relation to Industrial and Commercial development may prove to be waste of National wealth and labour. It is hoped that the All-India Council of Technical Education will take cognisance of this fact and guide and control the progress of Technical Education on the proper lines.

These educational and training developments will, of course, have to be in close coordination with the Industrial and Commercial development under the Plan. Those other sectors will make their own Budget for each Industry, Service, and Utility, as regards the trained man-power need. It will then be the function of the Education and Training sector of the Plan to provide the necessary technicians, skilled operatives, general labour as well as clerical and other overhead staff. In course of time, as the Plan gets more and more into effective operation, every trained person will get employment according to his training, aptitude and taste; while each Industry, Service, or Utility will be manned and staffed to the required degree. There will then be no unemployment, nor strikes and lockouts.

dealing with Agriculture pays proper attention to its own educational needs. Agriculture is the greatest single industry of the country, supporting, directly or indirectly, over 75 per cent. of our total population. This means excessive, disproportionate pressure on the soil; and it will be one of the most urgent tasks under the National Plan to reduce this pressure. Many social institutions and economic factors will have to be reconditioned before Agriculture, with all its attendant, subsidiary or processing industries, can be deemed to be fully rationalised, and yield its highest potential. And for all that adequate attention will have to be paid to the reorganisation of Agricultural Education.

It has been acknowledged universally that Agricultural Education including Education in Animal Husbandry and Dairying must be regarded as an essential branch of Technical Education. But in view of the special importance of these forms of production in this country, education and training in this field may have to be dealt with separately for some time to come. A special Committee on Agricultural Education was constituted by the Advisory Board. Its recommendations were more or less on the lines suggested by the Technical Education Committee. It stressed the importance and necessity of a comprehensive system of Agricultural Education and recommended the establishment of Agricultural High Schools on the same lines of the proposed Technical High Schools, for imparting general education with a strong agricultural bias. The number of Agricultural Colleges ought to be increased and more of central research institutions for research in agricultural and veterinary problems may have to be established. It has also recommended the formation of an All-India Council of Agricultural Education. While the Committee felt the strength of argument of bringing agricultural education under the control of the Educational Department, it recommended that under the present circumstances all Agricultural Institutions, except the Basic Schools, can continue under the charge of Agricultural Departments since this would result in a closer coordination between the research worker and the farmer.

But while so much attention has quite rightly been paid to primary higher education and technical training as well as scientific research, the larger aspect of education in the true sense of the term is not neglected. The scheme provides for adequate education in the liberal arts, cultural subjects and humanities in the Secondary as well as the College Stage only those unsuited to take the full benefit of such facilities are attempted to be provided for separately.

**Cultural co-operation** with other countries is likewise proposed to be attended to. Government appointed a delegation to attend the United Nations Conference held in London in November 1945 for the purpose of considering the establishment of a permanent Educational, Scientific and Cultural Organisation. The delegation was in favour of India's joining the proposed U.N.E.S.C.O. The Central Advisory Board has decided to set up a Committee to work out a detailed scheme for a National Education Commission for India.

### The Release Period Education Scheme.

During the War-period the Government of India put into operation an elaborate education plan, known as, **The Release Period Education Scheme (Indian Troops).** The scheme included a graded system of instruction from mere literacy to Matriculation, as well as intensive instruction in rural and urban development.

### Social Service and Public Administration.

As it was felt that a comprehensive plan of National Education should include **training in Social Service and Public Administration,** the Central Advisory Board has recommended that a Central body, called the "All India Council of Social Service" be set up, with an Institute for Research under its control, which should also have a Training Centre for social workers. This has already been given effect to so far as training the future officers of Government are concerned, who will take the place of the all-India services.

The Board also recommended that every university in India should have a Department for extra-mural work, under a thoroughly trained officer. The estimated annual recurring cost will be roughly Rs. 75000 to Rs. 100,000, which should be borne by the Government of India for an initial period of 5 years.

Encouraging response was given by the Director of Sir Dorabji Tata Graduate School of Social Work, Bombay to these suggestions. He recommends, with the permission of the Trustees of that Institution, that, as the Tata School has already started work, and has the nucleus of all that is necessary for carrying it on, the Government Scheme can work in co-operation with the Tata School. In that case Government would have to spend only Rs. 25,000 to Rs. 50,000, as against Rs. 75,000, to Rs. 100,000 as proposed by the Board.

**Medium of Instruction.**

Although no educational authority has, so far, been bold enough to start an experiment of making the mother-tongue the medium of instruction, yet it is accepted universally that that is the only suitable medium for effective instruction, at least up to the high-school stage.

The Central Advisory Board considered the recommendations of the Inter-University Board, (which discouraged the introduction of mother tongue as medium of instruction in the Universities) and recommended the Inter-Universities Board **to suggest ways and means for giving instruction through the mother tongue even in the higher stages of education.**

After all this review of the work done by the Central Government so far, it may be said that it is essentially exploratory or recommendatory, and not executive. But the ball has been rolling in a number of directions which will have to be all coordinated and integrated into the educational sector of a proper, comprehensive national Plan. Special inquiries have been held in such problems as Text book, Examinations, Terms and Conditions of Teacher's service, Educating the blind, the deaf and other defectives which have resulted in valuable suggestions in the respective fields, some of which are being put into action.

**Action taken by Provincial Government**

As requested by the Government of India, all the Provincial Governments prepared and submitted 5 year Development Plans in general conformity with the recommendations of the Central Advisory Board. In November, 1945, the Government of India suggested to the Provincial Governments to start forthwith parts of their 5 year Plans to counteract deflation and unemployment. It was stressed, that for the success of such Plan, those schemes should be undertaken which provided employment, increased income, and were of general economic importance.

Certain of these Schemes contained high priority subjects, e.g.

1. Training of teachers,
2. Building programme,
3. Providing employment to the ex-service men.

**Main features of the 5 year Provincial Development Scheme.**

1. Appreciable raise in the teachers salary to secure for them at least a "living wage".
2. Free-compulsory basic education for children of the age group 6-11 to begin with (to be extended to 11-14 age group).
3. General improvement in University education.
4. Increased facilities for Technical and Adult education.
5. Increased facilities for Scientific and Research work.

A list of the schemes mentioned above was submitted to the Central Government for its scrutiny and sanction of the necessary grants-in-aid. As the scrutiny is almost over, the Provincial Governments are on their way to put into operation the most urgent of such schemes.

**Adult Education**

The education of the adult mass, a very high proportion of which is utterly illiterate, will be a heavy responsibility. Even if we succeed in the next few years in bringing **all children of school-going** age under the system of free-compulsory Basic Education as part of the National Plan, the problems of higher education of the necessary personnel needed for carrying out the Plan would remain. Much as we might desire, that stage of education cannot be offered free on a universal scale. Some suitable method of selecting pupils for higher stages of Education will have to be devised and employed. The Report of the Committee on the method of selecting suitable boys and girls for higher Education was adopted by the Board with certain amendments, and forwarded to the Provincial Governments. The main recommendations are :—

For the purpose of this selection, the Basic Education period should be split up into two, the Junior Basic Stage ending with the fourth year; and the Senior containing the last 3 years of the course. At the end of the Junior stage, boys and girls who have shown special aptitude, and are needed for manning new developments in the national programme, should be taken to the higher stage of technical and vocational education and training. This would correspond to our present day High Schools. If the children so selected are unable to meet their own expenses of higher education, the State should provide scholarship and otherwise aid them to go through the course, as they are needed to speed up and carry out the Planned Programme of National Development in all its items and aspects. For those who seek such education, apart from the need of the State for such personnel; and whose parents are able to afford some expense on that account, a small charge or fee may be permitted. It will be a course of 6 years, which when completed will bring the alumni upto what we today style Intermediate level.

The Adult Education Committee considered and made recommendations regarding the provision of adequate facilities and agencies, new ways and means of imparting education, function of the university in this behalf, the Central and Provincial Bureau of Adult Education etc. The Central Advisory Board has endorsed most of the recommendations and added a few suggestions of their own. It will not be out of place to mention the summary of the main conclusions and recommendations of the Adult Education Committee which met in 1939.

1. Provision of facilities for adult education on the widest scale.
2. Literacy campaign is the main aspect, though not the only one, of the adult education.
3. Continuous and effective propaganda is necessary to make adults literate as well as to keep them literate.
4. A Committee of Experts to be appointed, to report on questions of teaching technique and survey the results of experiments. Education of the adults should be closely related to occupation, personal interest and social and economic conditions under which he lives.

5. Age-grouping for adult education should be from 16 onwards.

6. Universities must be urged to expand and popularise the work of their extra-mural department and provide students with opportunities to take a university course of teaching the adults. Efforts must be made to enlist the help of the voluntary agencies. Adult Education is a branch of social reconstruction. A strong appeal should be made to all educated persons, to render voluntary service in connection with literacy campaign. Preliminary training must be given to helpers in teaching adults.

   Besides the voluntary teachers, an adequate supply of trained teachers (professionals) will be essential. There should be Inspectors and Organisers for full time adult education work in every province.

7. Mechanical aids to learning, such as the radio, cinema, the gramophone, the magic lantern should be used to bring about speedier results in adult education. Every adult centre must have a library attached to it. Government should take steps to supply these with text-books regularly.

8. The Financial implication should be matters of local consideration.

9. The importance of a wide expansion of facilities for adult education is even more important in the case of women than that of men. The method of approach to this should be more varied and less formal.

10. It should be obligatory on all Government Departments—Central and Local—that their staffs are literate. The employers of labour etc. who do not make adequate provision for educating their employees should be taxed.

11. The Control of Adult Education Movement must be in the hands of the Education Department in each province. But the Central Government must come forward to give financial assistance to Provincial Governments for this work.

12. Every province must have a Bureau to collect and distribute information with regard to the Adult Education movement, besides a Central Bureau to co-ordinate the work of the Provincial Bureau.

As has been already mentioned, the Central Advisory Board adopted most of the recommendations and, regarding the rest, made a few suggestions:—

1. The Board were of opinion that it would be premature to appoint a Committee, whose work can be carried out at present by the Educational Commission.
2. Practical difficulties would arise with regard to the levying of a tax on employers who do not make provision for education of their employees.
3. The Board did not agree to make it obligatory on all Government Departments under the present circumstances to make the staff literate.
4. In view of the prior claims of primary education to any financial assistance from the Central Government, the Board was unable to accept the recommendation of the Committee that the Central Government should make a specific grant to Provincial Governments, for carrying out the scheme of adult education.

**Education for Special Communities:**

1. **Anglo-Indians and Europeans.**—The Inter-Provincial Board for Anglo-Indian and European Education set up a Committee to survey the Central Advisory Board's report on Post-War educational development in India and to decide what rationalisation and organisation were necessary for the all-round development of these communities, prospect of their employment etc.

2. **Muslims:**—A Special Committee by the All India Muslim Educational Conference, to consider the Report of the Central Advisory Board, has been appointed. A summary of the main recommendations of the Committee are given below:—

1. That compulsory education to be enforced though basic education should not be made obligatory.

2. Denominational schools should continue and they should be recognised.
3. Religion should form the basis of education.
4. In urban-speaking areas Urdu should be made the medium of instruction.
5. There should be separate curriculum for Muslim Elementary schools.
6. That there should be separate schools for Muslim boys and girls on principle.
7. That Selective system for High Schools should not be applied to Muslim community.
8. Seats should be reserved for Muslims both in High Schools and Universities, not by their percentage of population; and in the Universities the number of seats for Muslims should be doubled. Places and Scholarships in Technical Institution should be reserved for the Muslim students.
9. That number of Muslim men and women teachers to be appointed must be fixed.
10. Education should be administered by individual autonomous units.
11. There should not be any strong Central Education Department.

3. **Depressed Classes:**—The Government of India has made a sanction of Scholarships to the value of Rs. 3 lakhs for the education of the Scheduled Castes.

In addition to the Rs. 3 lakhs some 300 fresh awards have been made tenable for 1944-45. Besides, 22 awards tenable outside India have been specially reserved for the Schedule Caste Students benefitting even the girl students.

**Inter-University Board.**

The Inter-University Board of India in their meeting held in 1945 made many recommendations. The important ones from them are given below:—

1. To ensure uniform system of examination, 2 examiners to be appointed for M.A., M.Sc., B.Sc., Honours by all universities.

2. Honours or Post-Graduate students appearing either in Hindi or Urdu should have a knowledge of the other languages.
3. Alumni of such institutions as has an Indian language as medium of instruction should receive special preference in matters of employment etc.
4. There should be maintained a reasonable degree of uniformity regarding the nomenclature used by different universities for the higher degree. Accordingly they have decided to adopt the following:—
   - (a) B.A. and B.Sc. courses to follow 2 years after Intermediate, and M.A., Post Graduate study 2 years after B.A. and B.Sc. and 1 year after Honours.
   - (b) Similar decisions for uniform degrees and duration of courses have been arrived at regarding faculties of Law, Commerce, Agriculture, Medicine. Etc.

### All India Education Conference

The All India Educational Conference which concluded its three day session on January 18, 1948, made far-reaching decisions on different aspects of education.

The most important item considered by the Conference was the modifications necessary in the plan of educational development set out in the Central Advisory Board of Education's Report, popularly known as the Sargent Report, in the light of experience gained since the report was published in 1944.

Provincial Ministers of Education, Vice-Chancellors of Universities, Directors of Public Instruction and other eminent educationists present at the Conference were all agreed that the period required to complete the work of mass education must be substantially reduced from the period of 40 years envisaged in the Sargent Report. As suggested in the report, the Conference agreed that eight years should be the period of compulsory basic education, but in view of the practical difficulties in the way of introducing it immediately, this period might be reduced during the first stage, though in no case should it be reduced to less than five years.

The Conference resolved that simultaneously, to supplement further education, a comprehensive scheme of adult education should be put into operation immediately; that for the first five years conditions of training for teachers in basic schools would be relaxed; the work of full-time workers might be supplemented by part-time workers and skilled artisans; and the double shift system should be introduced to economise on buildings.

The conference also endorsed the recommendation of the Central Advisory Board of Education for appointing a small committee of educationists, to consider the question of finance required to implement the basic educational plan, including the question of Central grants, educational cess and educational loans.

The Conference recommended that the Central Advisory Board of Education should be fully representative of the Provinces, States and Universities, and for efficient work, provincial, regional and state committees should be constituted on the same basis to work on similar lines; that the Bureau of Education should extend its activities in library and film units; that the Inter-University Board should be strengthened financially and otherwise to enable it to discharge its duties effectively and maintain suitable standards of university qualifications.

K. T. SHAH

# Appendices

# OUTLINE OF THE EDUCATIONAL SYSTEM PROPOSED IN THIS REPORT

Kindergarten.

Primary Schools,
(Free & Compulsory)
Age - 7 to 14 or 15 years.

Subjects of Study:- as in the Wardha Scheme minus the vocational education, plus algebra; abolition of foreign units of weight, length, and coinage from arithmetic; medium of instruction - the mother tongue; instruction in different subjects in the general way and not centering round any art or craft as recommended in the Wardha Scheme.

Technical or Vocational Schools
to be considered as Continuation
Schools.
(Free and Compulsory)

Theoretical as well as part or whole of the practical training in these Schools. Students may be apprentined in factories, workshops, or smaller establishments; may receive allowances in later stages, if apprenticed.

Contents of the Curriculum:- Drawing, and artistic design, if necessary, sciences appertaining to the art or the industry, literature, accounting & book-keeping, economics, cost-calculations, civics, physical exercise and gymnastics.

Duration of the Courses:- 3 to 5 yrs.

Factories, Workshops, Independent
Establishments.

Refresher Courses in
different appropriate
institutions.

Secondary Schools
Free only for the meritorious
students of the Primary Schools

3 to 4 years' courses.

Curriculum:- Arts & Science subjects, a foreign language (preferably English) but mother-tongue remains the medium of instruction, general instruction in civics, history, economics, political science, physical exercise and gymnastics.

Teachers'
Training
Schools.
2 to 3 yrs'
courses.

Law, Medicine
& other professional
schools.
3 to 5 yrs'
courses.

Engineering & Technical Institutions
of Polytechnique
nature.
4 yrs' courses.

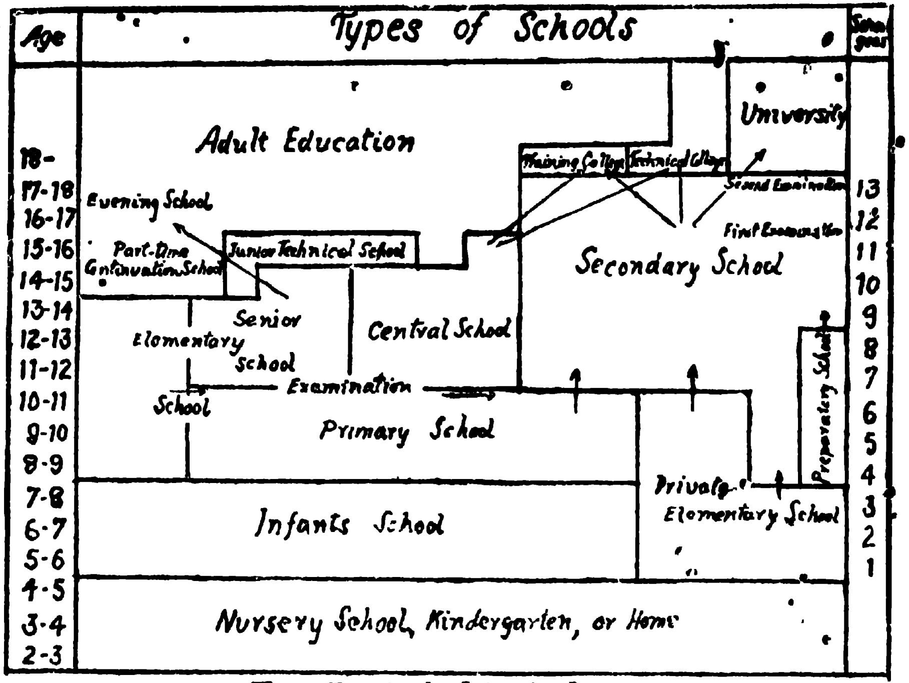
Universities
for pure Arts
& Sciences
3 to 4 yrs'
courses.

Post graduate
studies.

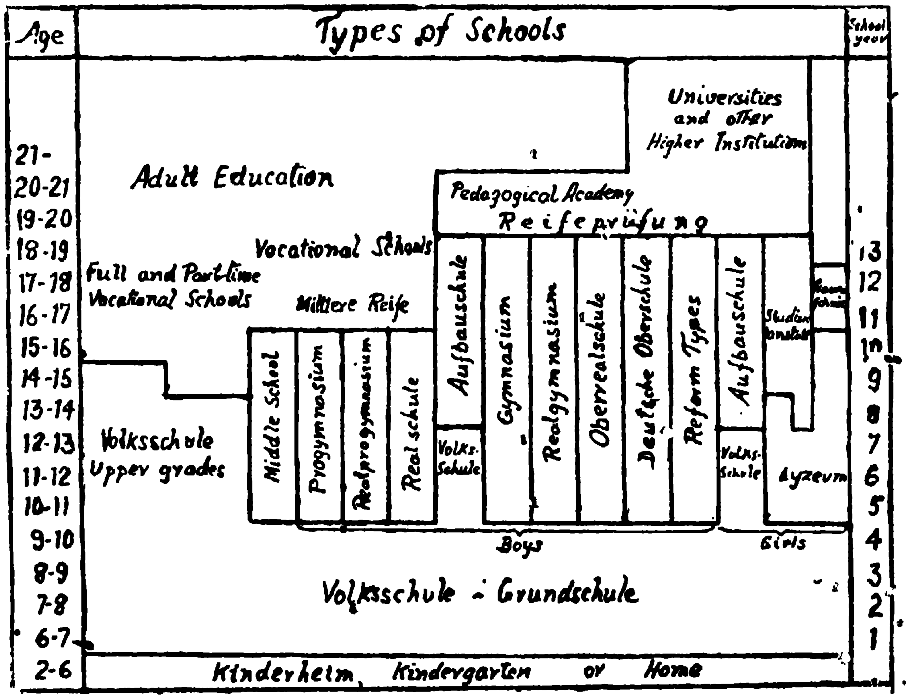
Factories
&
Workshops.

Post-Graduate
Schools.

Refresher Courses.



The English School System

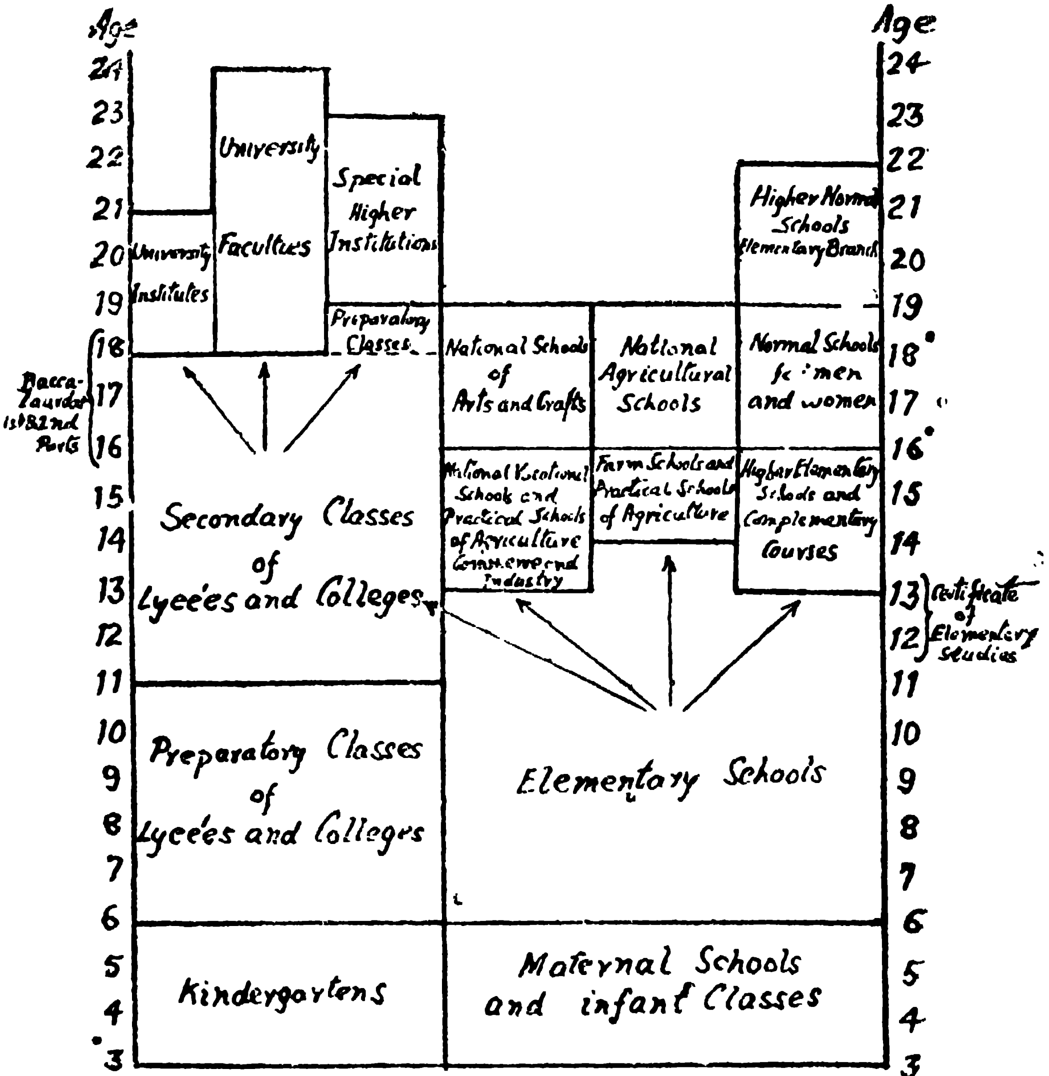


The German School System

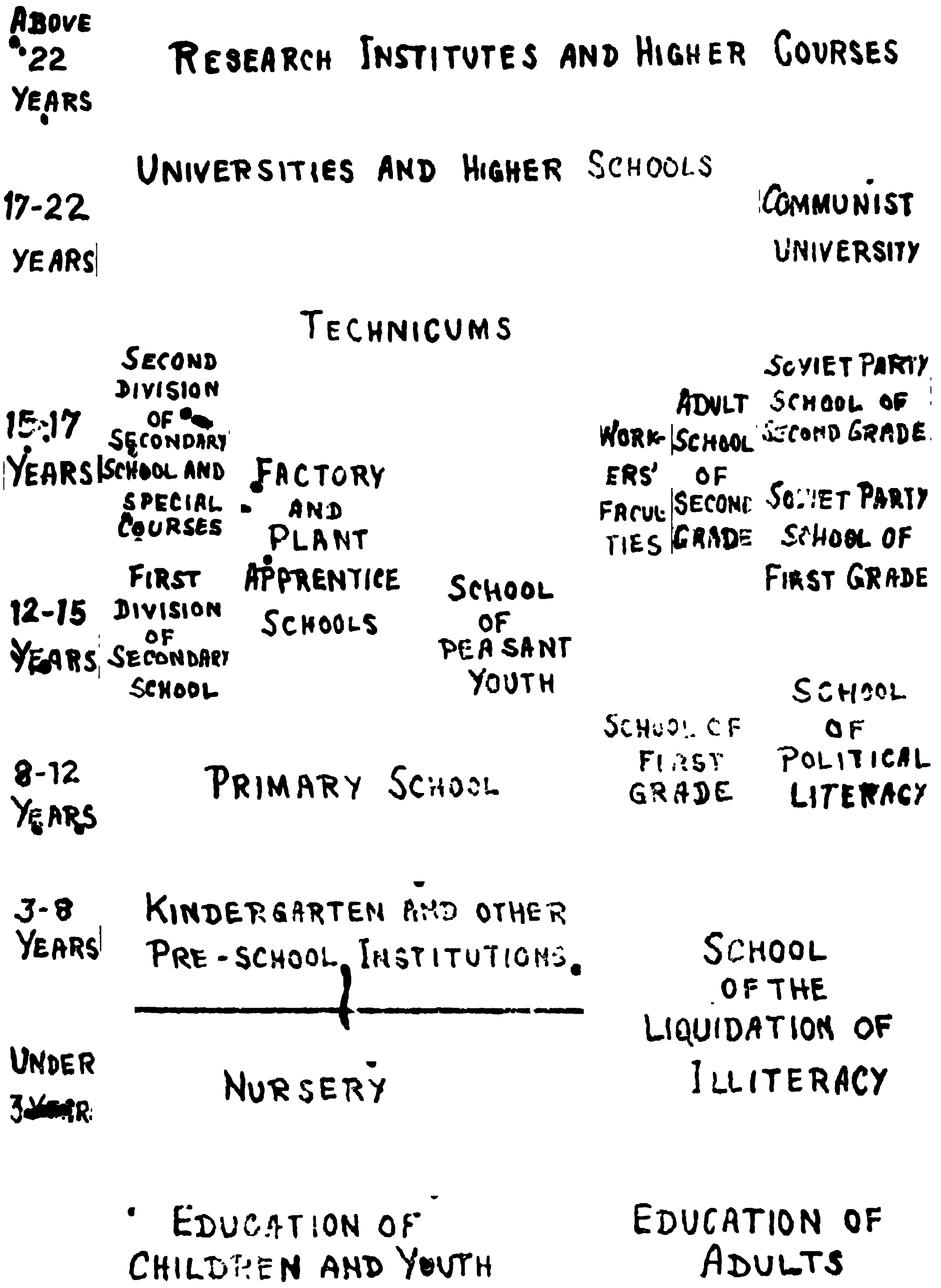
## Types of Schools

| Age | Types of Schools | | | | chool year |
|---|---|---|---|---|---|
| | | | | Graduate School | |
| 22- | | | | University | |
| 21-22 | Adult Education | | | | 16 |
| 20-21 | | | | | 15 |
| 19-20 | | | Normal Sch. or Teachers College | Undergraduate College | 14 |
| 18-19 | | | | | 13 |
| 17-18 | | | | | 12 |
| 16-17 | Part-time Continuation School | Four year High School | | Senior High School | 11 |
| 15-16 | | | | | 10 |
| 14-15 | | | | | 9 |
| 13-14 | | | | Junior High School | 8 |
| 12-13 | | | | | 7 |
| 11-12 | | | | | 6 |
| 10-11 | | | | | 5 |
| 9-10 | | Elementary School | | | 4 |
| 8-9 | | | | | 3 |
| 7-8 | | | | | 2 |
| 6-7 | | | | | 1 |
| 4-6 | Kindergarten | | Home | | |
| 2-4 | Nursery School | | | | |

The American School System


Age
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
Baccalaureat 1st & 2nd Parts
University Institutes
University Faculties
Special Higher Institutions
Preparatory Classes
Secondary Classes of Lycées and Colleges
Preparatory Classes of Lycées and Colleges
Kindergartens
National Schools of Arts and Crafts
National Vocational Schools and Practical Schools of Agriculture Commerce and Industry
National Agricultural Schools
Farm Schools and Practical Schools of Agriculture
Higher Normal Schools Elementary Branch
Normal Schools for men and women
Higher Elementary Schools and Complementary Courses
Elementary Schools
Maternal Schools and infant Classes
Age
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
Certificate of Elementary Studies

The French School System


Above 22 Years
Research Institutes and Higher Courses
Universities and Higher Schools
17-22 Years
Communist University
Technicums
15-17 Years
Second Division of Secondary School and Special Courses
Factory and Plant Apprentice Schools
Workers' Faculties
Adult School of Second Grade
Soviet Party School of Second Grade
Soviet Party School of First Grade
12-15 Years
First Division of Secondary School
School of Peasant Youth
School of First Grade
School of Political Literacy
8-12 Years
Primary School
3-8 Years
Kindergarten and other Pre-school Institutions.
Under 3 Year
Nursery
School of the Liquidation of Illiteracy
Education of Children and Youth
Education of Adults

Structure of the U.S.S.R. Educational System
(Adapted from Pinkevitch)

# SOVIET RUSSIA'S

| I | II | III | IV |
|---|---|---|---|
| From birth to 3½ yrs. | 3½ to 7/8 yrs. | From 8 to 12 yrs. | From 12 to 15 yrs. |
| Creches. | Nursery Infant School. | Primary School. | Middle School. |
| Under care of Commissariat of Health.<br>Cared for in Crèches, if the parents so desire. | Under Commissariat of Education. | One Teacher takes all subjects.<br>Compulsory education begins at the age of 8. | The child automatically enters this stage and stays till 15. |
|  | lum:- Education of the senses, colour, sense of rhythm, music, dance, handwork. | m:- Mother-tongue, arithmetic, writing, drawing, singing, physical training nature study, history and geography begin at the age of 10. Writing as a sepabate subject is dropped at 10. | Curriculum:- A foreign language is added, nature-study as one subject is dropped. Algebra, geometry, physics, chemistry are added. Social science and military defence in the last year. |
| Obligatory on factories, collective farms etc. to provide creches. | Obligatory on factories, collective farms etc. to provide. If such Units are too small, then the State directly provides for them. | Specially gifted children sent to music, art, or drawing schools, general education and specialised training.<br>Schools for physically and mentally defective children. | Co-education - mixed staff.<br>Upto this stage education is free.<br>At the age of 15 after finishing the Middle School Course, choice of career is decided. |

# PRESENT SCHOOL SYSTEM

V

VI

From 15 yrs, onwards.

**Industrial Training School.**

ontents:- 1) General Education.
2) Applied sciences relating to the particular industry.
3) Workshop practice.

Two years' course; all costs including lothing borne by the State.

ome stay till the age of 16 and get ix months' training in a Factory Appren- e School before entering industry.

urriculum:- including along with spec- al subjects relating to the profession.

ussian language and literature and cial science.

chnicums or Professional Schools ovided by the Industrial Economic ricultural or other Units. There e technicums for music, art, law, eatre, and various branches of ndustry.

uration of course:- 3 to 5 yrs. irst one or two years spent on eneral education. Fees of about .5/- a year paid by the student. emission of fees in the case of ritorious students (excellent in /3 of the subjects).

ursery School Teachers' Training hools:- 3 or 4 years' course.

trong[illegible]academical, students, ithout practical work, who de- ire to become specialists stay in o school for three years more. ees and their remission same as or the Technicums. After three ars in the school, the students ecide which profession they will up and sit for the entrance amination for the University or ngle Faculty Institutes, e.g.aero ynamics engineering, medicine etc.

lum:- Same for boys and irls. Physical training, singing d art are dropped, so also arith- tic; at a certain stage history geography are dropped, and bio- y, Darwinism and astronomy taken military defence for one year ded.

**University or Single Faculty Institutes.**

State run and State administered.

4 to 5 years' course.

In the last two years 40% of time spent in practical work.

Fees are charged for ordinary students.

Remission of fees for meritorious students (excellent in 2/3 of the subjects) and good in the rest at the Entrace and Yearly Examinations, as well as maintenance grants.

Teaching Institute:- 2 years' course to train teachers for the Middle School.

Pedagogy or Educational Institutes (a part of the University) 4 to 5 years' course.

Temporary - will disappear when sufficient number of trained teachers become available for the Upper Schools (Students 15 - 18 years of age) and lecturers for Teaching Schools.

## Table Showing :

## (i) Percentage of Literacy in relation to Population, and

## (ii) Percentage of Expenditure on Education in relation to Total Revenue, in the Provinces of India.

| Provinces. | Total Population. | Total Revenue. | Total number of Institutions. | Total number of Scholars. | Approximate Government Expenditure on Education. | Percentage of Literacy in relation to Total Population | Percentage of Expenditure in relation to Total Revenue. |
|---|---|---|---|---|---|---|---|
| 1. Bengal | | Rs. | | | Rs. | | |
| 1931—32 | 50,114,002 | 105,141,000 | 69,063 | 2,783,225 | 14,450,039 | 5.5 | 13.7 |
| 1936—37 | | 131,273,000 | 68,826 | 3,205,896 | 14,112,417 | 6.3 | 10.7 |
| 1941—42 | 60,307,000 | 140,314,000 | 59,405 | 4,033,593 | 18,891,000 | 6.6 | 12.1 |
| 1942—43 | | 156,979,000 | 55,004 | 3,865,332 | 19,093,000 | 6.4 | 13.4 |
| 2. Madras | | | | | | | |
| 1931—32 | 46,740,107 | 182,969,500 | 55,127 | 2,924,882 | 25,571,715 | 6.2 | 13.9 |
| 1936—37 | | 159,373,200 | 48,323 | 3,181,871 | 24,955,375 | 7.2 | 15.6 |
| 1941—42 | 49,342,000 | 182,136,700 | 39,837 | 3,471,900 | 38,662,200 | 7.0 | 15.7 |
| 1942—43 | | 189,786,400 | 38,762 | 3,400,166 | 29,540,900 | 6.8 | 15.5 |
| 3. Bihar | | | | | | | |
| 1931—32 | 32,368,000 | 51,519,000 | 31,214 | 1,094,828 | 8,859,000 | 2.9 | 16.8 |
| 1936—37 | | 50,326,881 | 24,341 | 1,007,408 | 8,448,179 | 3.1 | 16.7 |
| 1941—42 | 36,340,000 | 64,869,000 | 26,223 | 1,235,629 | 7,928,000 | 3.4 | 12.2 |
| 1942—43 | | 72,032,000 | 25,860 | 1,145,635 | 7,912,000 | 3.1 | 10.9 |
| 4. U. Provinces | | | | | | | |
| 1931—32 | 48,408,763 | 132,596,323 | 25,845 | 1,517,988 | 21,797,033 | 3.1 | 16.4 |
| 1936—37 | | 122,907,224 | 24,645 | 1,649,169 | 21,218,989 | 3.4 | 17.2 |
| 1941—42 | 55,021,000 | 140,930,417 | 25,692 | 1,874,561 | 22,316,000 | 3.4 | 15.8 |
| 1942—43 | | 171,232,000 | 25,020 | 1,793,834 | | 3.2 | |

| Provinces. | Total Population. | Total Revenue. | Total number of Institutions. | Totol number of Scholars. | Approximate Government Expenditure on Education. | Percentage of Literacy in relation to Total Population | Percentage o Expenditure relation to Tota Revenue. |
|---|---|---|---|---|---|---|---|
| 5. Punjab | | | | | | | |
| 1931—32 | 23,580,852 | 118,408,000 | 18,472 | 1,333,567 | 16,49[illegible],681 | 5.6 | 13.9 |
| 1936—37 | | 112,421,000 | 18,466 | 1,285,682 | 16,344,455 | 5.5 | 14.5 |
| 1941—42 | 28,419,000 | 126,058,000 | 19,692 | 1,429,628 | 16,182,000 | 5.0 | 12.8 |
| 1942—43 | | 144,918,000 | 19,347 | 1,436,371 | 16,714,000 | 5.1 | 11.5 |
| 6. Bombay | | | | | | | |
| 1931—32 | 17,992,000 | 152,047,000 | 17,210 | 1,335,547 | 19,001,654 | 7.4 | 12.5 |
| 1936—37 | | 119,955,000 | 14,609 | 1,335,889 | 15,551,740 | 7.4 | 12.9 |
| 1941—42 | 20,850,000 | 135,665,000 | 22,751 | 1,855,281 | 20,688,000 | 8.8 | 15.2 |
| 1942—43 | | 151,816,000 | 22,582 | 1,809,734 | 20,765,000 | 8.6 | 13.6 |
| 7. Sind | | | | | | | |
| 1931—32 | 3,887,000 | | | | | | |
| 1936—37 | | | 3,138 | 192,897 | 7,202,000 | 5.0 | |
| 1941—42 | | 54,340,000 | 3,724 | 238,796 | | 5.2 | |
| 1942—43 | 4,535,000 | 48,074,000 | 3,572 | 219,816 | | 4.8 | |
| 8. Assam | | | | | | | |
| 1931—32 | 8,622,251 | 29,091,000 | 7,194 | 372,318 | 2,882,606 | 4.3 | 9.9 |
| 1936—37 | | 25,474,000 | 8,460 | 459,878 | 3,126,157 | 5.3 | 12.2 |
| 1941—42 | 10,205,000 | 28,301,000 | 12,754 | 649,329 | 4,397,000 | 6.3 | 15.5 |
| 1942—43 | | 31,938,000 | 11,700 | 548,189 | 4,400,000 | 5.3 | 13.7 |
| 9. C.P. & Berar | | | | | | | |
| 1931—32 | 15,507,723 | 51,215,000 | 5,592 | 459,942 | 4,762,227 | 3.0 | 9.3 |
| 1936—37 | | 47,484,000 | 1,040 | 499,834 | 4,816,628 | 3.2 | 10.1 |
| 1941—42 | 16,823,000 | 51,076,000 | 6,871 | 572,744 | 5,441,000 | 3.4 | 10.6 |
| 1942—43 | | 52,662,000 | 6,719 | 541,422 | 5,501,000 | 3.2 | 7.5 |

## Table Showing:

### (i) Percentage of Literacy in relation to Population, and

### (ii) Percentage of Expenditure on Education in relation to Total Revenue, in the Provinces of India.

| Provinces. | Total Population. | Total Revenue. | Total number of Institutions. | Total number of Scholars. | Approximate Government Expenditure on Education. | Percentage of Literacy in relation to Total Population | Percentage of Expenditure in relation to Total Revenue. |
|---|---|---|---|---|---|---|---|
| 10. Orissa | | | | | | | |
| 1931—32 | 8,026,000 | | 8.701 | | | | |
| 1936—37 | | 18,957,000 | 8.401 | 331,088 | 1,894,088 | 4.1 | 9.9 |
| 1941—42 | 8,729,000 | 19,274,000 | 8.105 | 347,857 | | 4.0 | |
| 1942—43 | | 19,695,000 | | 334,036 | | 3.8 | |
| 11. N.W.F. Province | | | 1.166 | | | | |
| 1931—32 | 2,425,000 | | 1.091 | 88,469 | 1,864,011 | 3.65 | |
| 1936—37 | | | 1.347 | 98,889 | 2,095,742 | 4.08 | |
| 1941—42 | 3,038,000 | | 1.300 | 117,804 | | 3.87 | |
| 1942—43 | | | | 115,458 | | 3.8 | |
| 12. Ajmer-Merwara | | | | | | | |
| 1931—32 | 507,000 | | | | 409,805 | | |
| 1936—37 | | | 452 | | 426,846 | | |
| 1941—42 | 584,000 | | 469 | 32,675 | | 5.6 | |
| 1942—43 | | | | 34,195 | | 5.85 | |
| 13. Baluchistan | | | | | | | |
| 1931—32 | 464,000 | | | | | | |
| 1936—37 | | | 109 | | | | |
| 1941—42 | 502,000 | | 101 | 9,630 | | | 1.96 |
| 1942—43 | | | | 9,859 | | | 1.92 |

| Provinces. | Total Population. | Total Revenue. | Total number of Institutions. | Totol number of Scholars. | Approximate Government Expenditure on Education. | Percentage of Literacy in relation to Total Population | Percentage of Expenditure in relation to Total Revenue. |
|---|---|---|---|---|---|---|---|
| 14. Bangalore | | | | | | | |
| 1931—32 | | | | | | | |
| 1936—37 | | | | | | | |
| 1941—42 | | | 98 | 20,459 | | | |
| 1942—43 | | | 98 | 20,632 | | | |
| 15. Coorg | | | | | 144,740 | | |
| 1931—32 | 163,000 | | | | 170,488 | | |
| 1936—37 | | | | | | 8.59 | |
| 1941—42 | 169,000 | | 133 | 14,516 | | 8.6 | |
| 1942—43 | | | 128 | 14,544 | | | |
| 16. Delhi | | | | | | | |
| 1931—32 | 636,000 | | | | 1,157,081 | | |
| 1936—37 | | | | | 1,128,120 | 6.8 | |
| 1941—42 | 918,000 | | 440 | 62,405 | | 6.35 | |
| 1942—43 | | | 418 | 58,368 | | | |
| 17. Minor Administrations. | | | | | | | |
| 1931—32 | | | | | | | |
| 1936—37 | | | 124 | 26,350 | | | |
| 1941—42 | | | 127 | 26,103 | | | |
| 18. Total British India. | | | | | | | |
| 1931—32 | 256,753,000 | | 257,792 | 12,766,537 | 121,289,304 | 4.97 | |
| 1936—37 | | | 255,715 | 14,146,038 | 123,635,207 | 5.50 | |
| 1941—42 | 295,808,000 | | 228,053 | 15,993,187 | | 5.40 | |
| 1942—43 | | | 219,357 | 15,373,727 | | 5.20 | |

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